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LECTURES ON SURGERY, MEDICAL AND OPERATIVE,

DELIVERED AT

St. Bartholomew's Hospital;

BY MR. LAWRENCE.

Lecture LXXXIII.

Hernia, continued.—Treatment of Irreducible Hernia.—Strangulated Hernia; Symptoms; Treatment; Operation.—Inguinal Hernia.

Treatment of Irreducible Hernia.—When a rupture is rendered *irreducible*, either by increase of the bulk of the parts which are protruded, or by their adhesion to the sac, the patient is exposed to all the inconveniences of a permanent tumour, which probably increases regularly, and to the constant risk of the occurrence of strangulation; hence it is very desirable to convert a hernia from the irreducible to the reducible condition, even if nothing more than that can be done. You may sometimes succeed in effecting the return of a hernia, if it has not been long unreduced, by putting the patient on low diet, exhibiting active aperient medicine and applying cold to the swelling, so as to diminish the bulk of the protruded parts; and this has been attempted with a view of accomplishing the object, even after the hernia has remained irreducible for a long time. You will of course understand that there is no chance of effecting the return of herniæ which are rendered irreducible by adhesions; but when we cannot understand exactly the nature of the obstacle to reduction, it is right to make an attempt to return the hernia if it has not been long in the irreducible state. In adopting measures of this kind, you must bear in mind the state of health of the individual, and not adopt any measures so powerful or so serious as to run the risk of injuring his health.

It may be a question, whether you would, under any circumstances, think it right to propose an operation for accomplishing the return of the protruded parts in an irreducible hernia, when they cannot be replaced in any other way; whether, supposing the obstacle to depend on adhesions, you would think it right to open the hernia, separate those adhesions, and carry back the parts into the abdomen. Now, all the objections which I mentioned to you as applicable to this proceeding for the radical cure of reducible hernia, are applicable to the operation in this case also. An irreducible rupture is only an inconvenience and a source of risk to the patient, but the operation which you perform immediately endangers his life. As a general rule, therefore, the operation in question is not admissible under such circumstances; though we cannot, perhaps, lay down absolutely that it should never under any circumstances be performed. I remember the instance of a gentleman who had an irreducible omental hernia. As the neck of the sac was constantly kept open by the protruded omentum, he was liable, on any exertion, to have a portion of intestine descend; the intestine was then subject to pressure; at those times great pain was experienced by the patient, who became sick and was obliged to go to bed and remain there till the intestine could be returned, suffering very considerably till this object could be accomplished. Now, this was a fine young man, just at the active period of life, and he found the inconvenience of this rupture so great that he was resolved to attempt getting rid of it, and, in fact, an operation was performed. It was found to be an adherent omental hernia as was anticipated; the adhesions were separated, and some portion of the omentum was removed. This gentleman nearly lost his life in consequence of the inflammation that supervened after the operation. It is a proceeding, therefore, only to be adopted very cautiously at the urgent request of the patient, and where there is inconvenience of the most serious kind, in consequence of the irreducible state of the rupture; and, indeed, even under such circumstances, it is not to be recommended to the patient, it is only to be performed if he should absolutely require it. Under other circumstances, the patient

should content himself by having the tumour supported as much as possible by a suspensory bandage. It does not always happen that a hernia increases to an enormous size, even if no bandage should be worn. I am acquainted with a member of our own profession, who has had a large scrotal hernia for a number of years; it was originally a reducible hernia, but although he could return the parts into the abdomen, so much pain and inconvenience were produced that he could not bear them up, and was obliged to take the truss off and leave the parts to themselves. Thus the hernia remained down, and though he has been employed since that time in a very active life, and been in the habit of riding about in the country with this scrotal hernia, and it has attained a very considerable magnitude, it does not interfere with his occupation. Other instances have sometimes been seen, particularly in females, who have not been willing to mention the existence of a complaint of this kind, where no truss has been worn, and where still the hernia has not enlarged to any great extent, or been attended with any danger.

Strangulated Hernia.—The most dangerous condition of a rupture is that of strangulation, or incarceration, which are synonymous terms; that is, where the protruded parts experience such a degree of pressure from the sides of the opening, through which they pass out of the cavity of the abdomen, as not merely to confine them in that situation and prevent their return, but to suspend their functions, to produce inflammation in them, which is propagated to the contents of the abdomen generally, and which in a very short time brings the patient into a condition of great danger. The pressure here, or rather the part which produces the pressure, which confines the protruded viscera, and prevents them from being returned, is technically termed the *stricture*—the contracted portion of the opening; and this stricture either is produced by the sides of the opening through which the viscera are protruded, or that thickened and hardened state of the sac which I described to you in the last lecture. So far as the pressure is concerned, it is immaterial whether it is produced in one or the other of those ways; indeed the effects of strangulation or incarceration are the same whatever its cause may be. The immediate effects produced by the stricture, are on the parts which are surrounded by it; changes are then induced in the protruded viscera below the situation of the stricture, and the effects of the pressure are also propagated in the other direction to the intestine situated above the stricture, and to the other contents of the abdomen. Further, this pressure suspends the functions of the parts that may be protruded; and as those are generally some portion of the alimentary canal, of course a stop is put to the transmission of the alimentary matter. The first or immediate effect of the stricture on the parts which it embraces, is a mechanical impression on them, as if a thread were tied round them; and when they have been subject for a time to the operation of the stricture, the impression remains on them even after they are taken out and put up as a preparation. Here is a preparation of that kind; this is a portion of the intestine and mesentery; the part producing the stricture has been taken away, but you see very plainly the mark or indentation which it has left. Here is an example of a case in which the bowel is very much distended above and below the stricture, and reduced at the point where it has been girt round by this band, to the size of a large writing-quill. The stricture has been removed, and there is nothing to prevent the parts from resuming their natural situation, but still they remain in that state, appearing, as you see, to be almost cut through.

Now, when you see this considerable mechanical effect produced by the pressure of the stricture on the protruded parts, you will not be surprised at finding, where a portion of the intestine is surrounded by a tight ligature of this kind, that the coats undergo ulceration, which sometimes nearly separates the bowel at the point where it is thus compressed. Generally speaking, however, the ulcerative process will go through the internal mucous membrane and the muscular coat, but will not penetrate the serous coat; the serous coat resists the ulcerative process longest, but in some cases there will be made an opening directly through it. This is a specimen in which there is a bit of straw introduced into the ulcerated opening, and it goes completely into the cavity of the abdomen. Here is another, where the serous coat is completely perforated, so that you see an opening of some size into the abdomen, where the stricture has been situated. This is produced by ulceration in an incarcerated hernia, but it is by no means uncommon to find that the internal and middle coats are ulcerated, the serous membrane remaining entire.

If the protruded parts are thus firmly pressed upon, the circulation through the vessels of the parts below the stricture becomes impeded; the vessels become distended, particularly the veins; the coats of the intestine are thickened, and the veins being filled with dark-coloured blood, the whole is very considerably discoloured; the same kind of effect is produced on the protruded parts as would be produced upon the leg or arm, if you tied a ligature round either of them. There is then an impedi-

ment of the circulation, a distention of the vessels, a thickening of the coats, and a livid discoloration of the intestine. This discoloration is often very considerable; the intestine assumes a deep chocolate-brown colour, or a dark livid tint, hardly distinguishable from black. When you see from the first a portion of bowel which has undergone this change in a case of hernia, you are inclined to imagine that it is mortified; but this is merely an appearance produced by the pressure and the interruption of the circulation.

Further effusion takes place from the surface of the protruded parts. Generally a serous, bloody, reddish-coloured fluid, is poured out into the sac, and we meet with such a fluid when we open it in performing the operation for strangulated hernia. Sometimes there is a considerable quantity of this fluid effused, sometimes a small quantity; sometimes you meet with hardly any at all. Effusion of coagulating lymph may also be produced from the surface of the bowel and omentum. If the pressure is not sufficient to interrupt the circulation, it may have the effect of exciting inflammation; coagulating lymph will then be effused, and thus the protruded bowel or omentum will become agglutinated to the sac. This adhesion, however, is so slight, that you can separate it with your finger, or with the handle of the scalpel; it is a different kind of adhesion from that which takes place between the sac and the other parts, at the end of a considerable length of time. The effects produced in the cavity of the abdomen are those of inflammation, excited in the parts immediately embraced by the stricture, and propagated by continuity along the surface of the serous membrane generally, where it produces the ordinary effects of peritoneal inflammation. The functions of the protruded part are arrested, so that if any part of the bowels be protruded the costiveness is produced; in consequence of this circumstance the alimentary canal, above the situation of the stricture, becomes greatly distended. No doubt, secretions take place from the mucous surface of the canal, in consequence of the irritation excited in it by inflammation; and we find, when we come to examine the bodies of persons who die under such circumstances, that the intestine above the stricture is enormously increased in size, and filled with a fluid matter and flatus, while, on the contrary, that part which is below the stricture, is in an equal degree diminished, contracted, and free from inflammation. The interruption of the functions of the bowels and the costiveness are easily explained in cases where the stricture is so considerable as I have just described—where the bowel is firmly embraced, and its sides brought into contact by the stricture; but these symptoms are also observed under other circumstances.

There are some instances of very small hernia, where only a portion of the diameter of the intestine is included in the stricture, so that there would be a passage still left for the contents of the alimentary canal; yet in those instances there is costiveness, and the functions of the canal are interrupted. There are also instances of strangulated omental hernia, where no bowel is protruded at all, and where the consequences are the same as where the hernia consists of intestine. So that the suspension of the functions of the alimentary canal, and the costiveness, are not to be ascribed merely to the mechanical state of the stricture, but to the inflammation of the protruded parts, and in the cavity of the abdomen.

Symptoms.—From these effects of the stricture, you will easily see what the symptoms must be which are found in a case of strangulated hernia. Costiveness, which does not yield to the exhibition even of the most active aperient medicines. Sickness, either nausea or actual vomiting. And when the strangulation lasts for a considerable time, it appears that the contents of the bowels pass in an unnatural direction; the peristaltic action of the bowels is inverted, and their contents are ejected from the mouth—not simply those of the stomach, but a matter is ejected which is considered to be fæcal, and this is called *stercoraceous vomiting*. It is doubtful whether actual fæces are ever ejected in this way, but at all events, the contents of the small intestines, consisting of a liquid substance and tinged with bile, are certainly thrown up in the protracted states of strangulated hernia. There is pain in the swelling; tenderness on pressure first, then considerable pain: this pain is most considerable at the neck of the sac, just where the parts are embraced by the stricture; but gradually extends over the whole abdomen, in consequence of inflammation passing to it from the stricture; distention of the abdomen takes place, and indeed all the symptoms that belong to a case of peritonitis. The abdomen feels firm and tense as well as painful. There is a quick, but at the same time, small and hard pulse, a white and dry tongue, sense of feebleness, coldness of the extremities, and thirst. These are the kinds of symptoms that are observed in cases of strangulated hernia.

Now, all cases of strangulated hernia do not present exactly the same assemblage, or the same degree of symptoms; there is a considerable variety. You sometimes have the symptoms coming on very rapidly, arising quickly to a high pitch, and changes

of a very serious nature taking place in the parts within a short time. In other instances, the symptoms come on almost insensibly; they proceed very slowly, and the strangulation exists for a considerable length of time without the occurrence of any serious or marked alteration in the parts. The inflammation, therefore, which occurs in cases of strangulated hernia, may, as in other cases, be either acute or chronic. If a hernia forms suddenly in a young and robust person, from some accidental circumstance, the progress of the case will be very acute; the tumour from its commencement is exceedingly painful; pain and tension come on in the abdomen, and the local changes go on very rapidly: within a few hours the intestine frequently becomes cold, and if it be not liberated, mortification will speedily ensue. In other instances, where a hernia has existed for a considerable time in elderly persons, more particularly if it is a large hernia, the symptoms of strangulation come on very slowly. In the first instance, perhaps, obstruction takes place in the bowels, and gives rise to the state of strangulation of the intestine. The symptoms are rather referable to the obstruction in the passage of the contents of the alimentary canal than to pressure and inflammation excited by it; and several days will go on without their assuming a very formidable character. The pain in the tumour is not very considerable, there is little pain and no tension in the abdomen; and thus at the end of many days, the state of the patient may be less dangerous than that of another after the expiration of a few hours. I operated on a gentleman in the evening, in whom the hernia had become strangulated in the morning of the same day; he was a young man of full habit; the symptoms were very violent, there was intense pain all over the abdomen; the tumour contained intestine only, which was of so deep a colour, that I think an inexperienced person would have said it was mortified. In the case of an old woman now in the Hospital, the operation was performed at the end of 36 hours after the strangulation had taken place; yet the intestine was by no means much altered in colour, and the symptoms were not very violent. In the case of acute strangulation, the mischief consists of acute inflammation of the tumour, produced by the pressure of the stricture, immediately over the parts protruded, and spreading over the abdomen. In the case of chronic strangulation, the symptoms are mostly referable to obstruction in the alimentary canal,—induced in some measure by the stricture, to a confined state of the bowels, the gradual circulation of their contents, and the inconvenience arising from such accumulation.

Treatment.—The first object in the treatment of strangulated hernia is, of course, to replace the parts that are pressed upon by the stricture—to return the protruded viscera into the cavity of the abdomen; if you can accomplish this, the danger of the patient is at an end. We naturally try, in the first instance, to return the protruded parts by pressure with the hand; and this process is called in books the operation of the *taxis*. When we perform this, in the case of a hernia which is either strangulated, or on the point of becoming so, we of course place the patient in such a position, and proceed in such a manner, as will give us all possible advantages in respect to the return of the parts. We place the patient in the horizontal position; for the contents of a rupture in a reducible state, will return when the body is in the horizontal position. It is of advantage to have the pelvis a little elevated, and the trunk of the body slightly incurvated, so that the abdominal muscles shall be relaxed; and in those ruptures that pass out at the inguinal canal we relax the muscles of the pelvis, so as to diminish the tension at the opening through which the parts are protruded. Then being at the side of the patient, we embrace the tumour with one hand, and subject it to a general pressure, employing the finger and thumb of the other hand at the neck of the tumour, in order to get the parts into the abdomen. We press the tumour gently, varying the direction of the pressure according to circumstances, bearing in mind in each instance the course which the protruded parts must have taken, and giving our pressure a direction accommodated to the course of the rupture. In doing this, it is necessary to proceed gently, not to grasp the parts violently, nor to push them with considerable force, nor to squeeze them against the bony parts of the parietes through which the protrusion has taken place; for, by so doing, we should add to the mischief, and probably in that way fail to accomplish our object. We should proceed with particular caution where the symptoms of strangulation have actually come on. To say the truth the return of the parts by the taxis, as it is called, is more applicable to that state of a rupture which immediately precedes incarceration, than to the state of incarceration itself. When the parts become inflamed, and the inflammation is spreading to the abdomen, we have little chance of returning them into this pressure; but in the state which exists just before this, we may accomplish the object. Any thing like force, any thing like continued efforts, after the parts have become inflamed, must, for evident means, be exceedingly injudicious. No doubt a great deal of mischief is done by attempts of this kind, and by their injudicious repetition, as well as by the repeat-

ed trials made by the different persons, when they are called in consultation upon a case of this kind. No good whatever can result by three or four or five persons trying to return the hernia; indeed, the thing is so simple, that whatever can be done in that way can be done by one person; and if he does not succeed, supposing the attempt to be judiciously made, there can be no good object answered by any other person making it. Dessault was so impressed with the prejudicial effects of pressure upon a strangulated hernia, that he entirely prohibited all such attempts in the *Hôtel-Dieu*. When, therefore, a person was brought in with strangulated hernia, he confided entirely in other means; he would not allow any pressure whatever to be made, until the inflammation was completely overcome, and the parts brought into a situation in which they would almost return of themselves. I merely mention this, not with a view that you should abstain altogether from attempts of that kind, but to satisfy you that the prejudicial effects must have been very great to have induced so great a surgeon as Dessault to lay down such a rule. If you cannot gain your object then by the taxis, you must endeavour to reduce the inflammation; and if you can accomplish that, there will be little further difficulty; if you can bring the parts which are subject to pressure into a natural state, if you can relieve them from the injurious effects of the stricture, the hernia will be easily reduced.

The first measure that is naturally resorted to in a case of this kind, is the abstraction of blood—venesection; and a patient with strangulated hernia may, in general, be safely bled to some extent. We cannot assert that bleeding is proper in every case; but it is usually a proper measure, and it is to be employed, unless there should be some contra-indicating symptom. The danger of a patient with strangulated hernia is from inflammation; the danger of failure in the operation, if it comes to be performed, is from inflammation, and therefore the loss of blood in the early period of the strangulation cannot be otherwise than beneficial. A rupture is often returned after the patient has been bled, more particularly if the bleeding produces syncope. The warm bath is also a powerful remedy; it should be as warm as the patient can well bear it; you should keep him there for some time, till it produces a state approaching to faintness, and the rupture can often be then returned. The application of cold to the tumour which reduces the bulk of the protruded parts, and diminishes inflammation in them, is also a very proper measure to be employed. It may be used after a person has gone into the warm-bath; if this has not been successful, ice may be applied to the tumour, pounded, put into a bladder, and laid upon the parts; or you may employ ice-water at 32°; or you may employ, if you have no ice, a freezing mixture made with salt and water. These are, perhaps, the three most important measures: the loss of blood, the warm-bath, and the application of cold to the swelling.

There is another powerful measure which has been much confided in, and that is the exhibition of tobacco in the form of injection. Sometimes tobacco-smoke has been thrown up by means of an apparatus for that purpose, something like a pair of bellows, with a glyster-pipe at the end of it, and a contrivance for the burning of the tobacco. This, however, is uncertain in its operation; and, therefore, when tobacco is employed now, it is used in the form of injection—a drachm of tobacco to a pint of boiling water; and half that quantity is to be thrown up, and if it does not produce its peculiar effects on the system, which consists in a great diminution of the force of the action of the heart, and general relaxation of the powers of the system—if those effects are not produced within a quarter of an hour or twenty minutes, the other half may be injected. During that state of depressed arterial action, and depressed nervous energy, which tobacco causes when employed in this way, strangulated hernia is often returned. You must be aware, however, that this a very powerful agent on the system, and that its employment is attended with some degree of risk. Instances have been known, in which the tobacco-injection seemed to have proved fatal, therefore it must be employed with great caution; and, indeed, in consequence of its violence of operation, I think it is now (and perhaps judiciously so) much less frequently employed than the means I have already mentioned. Although there is no doubt that, in many instances, the influence of tobacco on the system has produced the return of the hernia, when the operation seemed almost inevitable.

The costiveness which prevails at the commencement, and throughout the strangulation, has materially led to the exhibition of purgative medicines; but it is obvious that these are not suitable, when strangulation is fully formed. When inflammation within the cavity of the abdomen has taken place, when vomiting is excited by whatever is put into the stomach, when the alimentary canal above the stricture is distended and filled with liquids and flatus, you cannot expect to benefit a patient by the additional irritation which the exhibition of purgative medicines produces; they are, therefore, only to be used in the very commencement, where you may expect to produce a return of the protruded parts by an

active aperient, and more particularly in the case of chronic strangulation. In the case of an old rupture, where the symptoms of strangulation come on slowly, and where there is reason to suppose that obstruction in the alimentary canal is their primary cause, a brisk purgative medicine will sometimes accomplish the purpose we wish.—Under such circumstances calomel and jalap, or calomel and colocynth, are suitable purgatives.

Operation.—In failure of the means that I have now described to you, we must have recourse to the operation. The state of a patient with a strangulated hernia, is one of very urgent and eminent danger. You must employ, therefore, at once means of an active kind, and when they fail, you must lose no time in resorting to the only mode of relieving the patient that remains—the performance of the operation. There is no case in which inert treatment and injudicious delay are more prejudicial than in that of strangulated hernia. You must, of course, reflect beforehand on the means you may find it necessary to adopt; on this account you should be prepared to employ measures of the most active kind as quickly as possible; and as soon as they have failed to produce the desired effect, then you must lose no more time, but resort to the operation. If active means have failed, you cannot expect that any good will result, by waiting to see if any good effect will be produced from their repetition, or from the employment of less active measures; and the state of a patient with strangulated hernia is never stationary—it is always getting worse, therefore the longer you delay the operation, the more is the chance of recovery diminished. A great proportion of the operations for strangulated herniæ do well when they are performed early, and a great proportion of them turn out unfavourably when they are delayed. Heretofore it used to be the practice to go through a round of all the means that could be devised for the reduction of strangulated rupture, before proceeding to the operation, and cases of rupture then turned out very badly. It is now the practice, on the contrary, to use active means at once, and when they fail, to proceed immediately to the operation; and there is, proportionately, a favourable change in the results of the operations. For my own part, I should say that I have many times seen the operation performed too late, and that I do not know that it has ever come within my observation to see a case that I should say was operated on too soon.

Inguinal Hernia.—Inguinal hernia, or, as it is technically called, *bubonocele*, takes place through the opening in the abdomen, which transmits the spermatic chord in the male, and the round ligament in the female. The parts which are protruded in this way form a tumour in the groin, and if that tumour increases, it descends into the scrotum in the male, and into the labium pudendi in the female, in which latter case it is called, in the male, *scrotal hernia*. Inguinal and scrotal herniæ, therefore, are so far the same, that a scrotal hernia has been an inguinal hernia originally; it is merely an inguinal hernia extending lower down into the scrotum.

In a case of inguinal hernia, the parts are protruded through the same opening, but they are not protruded in all cases in the same manner. In the majority of instances they pass over the spermatic chord, and along the whole course of the canal, and therefore they take precisely the same course which the spermatic chord does. The spermatic chord goes out of the abdomen, not in a straight but in an oblique direction. It first passes out nearly midway between the anterior superior spine of the ilium and the symphysis pubis; it then runs obliquely between certain portions of the abdominal muscles, and passes out over the pubis at the ring, in the external oblique muscle. Thus it is directed obliquely from above downwards and forwards; and the greater number of inguinal herniæ pursue this course, that is, the parts are first protruded in the space midway between the bony parts I have just mentioned; they run between the muscles, and then come out of the ring in the external oblique muscle. The neck, or upper part of the sac, is oblique, passing in the same course with the spermatic chord through the inguinal canal, and the hernia, in that case, following precisely the course of the chord, is protruded on the outer side of the epigastric artery, so that this artery is situated on the inner side of the sac. This kind of rupture is called *external* inguinal hernia, the parts being protruded on the outside of the epigastric artery. This is a specimen of a rupture of that kind, and here is the epigastric artery running along the inner edge of the mouth of the sac.

The neck of the sac of a hernia of this kind is just as long as the inguinal canal; for it is the part embraced between the abdominal muscles, and lying in the space that intervenes between the upper and the lower openings of the inguinal canal. That is the state of the parts when the rupture is first formed; but after it has lasted for some time, the gradual weight and pressure of the protruded parts bring the upper part of the hernia in a line with the lower part, so that after a certain time the neck of the sac loses its obliquity, and that which was the neck is nearly at the bottom. As the parts in this case are protruded immediately over

the spermatic vessels, they pass between the cremaster muscle and those vessels, and below that covering which the tunica vaginalis gives to the chord and the spermatic vessels. The peritoneal sac, therefore, is covered externally by the cremaster muscle, and by the tunica vaginalis communis. In this form of the rupture then, you have, in addition to the usual coverings, an external and thickened covering, made by the tunica vaginalis communis and the cremaster muscle. Here is a dry preparation showing that; here are the fibres of the cremaster muscle running quite distinctly over the hernial sac; here is the hernial sac; here is the hernia and the testis below; here is the hernial sac laid open within, and these are the external coverings which are derived from the sources I have mentioned.

The hernia comes directly over the spermatic chord, which is thus generally situated at the back of the hernia. In old herniæ the pressure separates the constituent parts of the chord, and the swelling insinuates itself between them, so that you may have the vessels and nerves on one side and the vas deferens on the other; here is a specimen of that sort; here is a specimen of another case, where you see all the parts separated in that way; but in a small hernia, the spermatic chord is situated along the middle of the back of the hernia.

This then is the course which the hernia takes in the more common species, which as I have mentioned is called *external* inguinal hernia, in consequence of the contents of the abdomen being protruded outside the epigastric artery. There is another kind of hernia which does not come through the inguinal canal, but is forced directly out through the external ring, on the inner side of the epigastric artery, so that in this case, the artery is situated on the outside of the hernial sac, this is called an *internal* inguinal hernia. Now in this case, in which the hernia comes out directly through the external ring, the neck of the sac is not at all oblique, even at the very commencement; the opening is directly and immediately into the cavity of the abdomen, and there is not that long oblique neck which is observed in the case I have just described to you. Hence those two kinds of hernia have been called by Sir Astley Cooper, oblique and direct inguinal hernia. The latter kind is much less frequent than the former. I do not know the exact proportion; some have said in the proportion of one to five: but I rather think the direct inguinal herniæ are not so numerous, perhaps they do not occur more than in the proportion of one to ten, or even fifteen. In this case, the hernial sac is situated on the outside of the spermatic chord, and not covered by the cremaster muscle or tunica vaginalis.

There is another modification of the external or oblique inguinal hernia; you may have the parts protruded at the superior or internal aperture of the inguinal canal forming a tumour, but not coming out at the external ring; there the hernial tumour is contained within the inguinal canal. But the parts may not only be protruded and confined in that situation, but they may be pressed upon by the margin of the opening through which they have been protruded, and become strangulated. In this variety of the tumour the hernia is generally very small, and covered externally by the aponeurosis of the external oblique muscle, so that the boundaries of it are not very distinctly defined. If such tumours are pressed much, they may pass out of the external ring and become common external inguinal herniæ. This is a specimen of that kind which I showed you before, for the purpose of satisfying you that herniæ may take place without producing an external tumour. If I do not mistake, this was taken from a patient who died in consequence of the existence of the hernia not being ascertained during life from the smallness of the swelling, though a careful inquiry was made, and careful examinations instituted, in the various situations of herniæ, in order to see whether there was any such protrusion.

This preparation points out to you the necessity of a cautious examination of all those parts through which herniæ may protrude, in the case of persons labouring under such symptoms as may be produced by strangulated intestine; you must not merely ask a patient whether any tumour exists in such instances, but you must actually feel with your own hand, and press in every situation, in order that no small rupture may in possibility escape your observation. There is another kind of caution also to be observed, rather of a contrary kind to this, in cases of herniæ; that is, you must be aware that inflammation of the bowels or inflammation of the cavity of the abdomen, may take place in a patient who has hernia, and the state of that individual may present to you a puzzling combination of circumstances, in which you find it difficult to determine, whether the hernia is the cause of the symptoms which the patient labours under, or whether the symptoms are not independent of it. You may have affections of that kind occurring in an individual with a rupture, just as it might occur in a person without a rupture; but when such symptoms exist, where you have costiveness and inflammation of the bowels, the first impression on your mind will be, that the rupture is the cause of the symptoms, but it is not necessarily so. In order to determine this point, it is necessary to attend very carefully to the origin and

state of the tumour; to see whether the symptoms commenced in it and extended to the abdomen, or whether they commenced in the abdomen, the tumour remaining free from pain, tension, and the other conditions which belong to strangulation. The state of the tumour when you make the examination, and the point at which the symptoms commenced, are the two circumstances which will probably guide you in determining the point in question in instances of that kind.

Lecture LXXXIV.

Inguinal Hernia, resumed.—Proper Situation for a Truss.—Operation for Strangulated Hernia.—Artificial Anus.—Prolapsus of Intestine from Artificial Anus.—Stercoral Fistulæ.—Hernia Congenita.—Symptoms and Diagnosis of Inguinal Hernia.

I began to speak in the last lecture of *inguinal hernia* or *bubonocele*; I observed that there are two varieties of that rupture, one in which the parts are protruded through the inguinal canal, entering at the superior or internal, and making their appearance at the external or inferior opening, namely, the aperture in the tendon of the external oblique, first appearing as a tumour in the groin, and then gradually extending into the scrotum. I mentioned that it is called *external inguinal* hernia in consequence of its being protruded on the outer side of the epigastric artery; that the parts are protruded directly over the spermatic chord, between it and the cremaster muscle, and that the peritoneal sac receives an external covering from the cremaster and the tunica vaginalis communis. I stated to you that it was also called *oblique inguinal* hernia, in consequence of its having, particularly in the commencement, an oblique direction from below upwards and outwards. I stated that there is another kind of this rupture in which the parts are first protruded at the superior or internal aperture of the inguinal canal, and do not pass out at the inferior aperture, and that they may be even strangulated in this situation; that in that case the hernia is, of course, situated in the groin, and is covered by the external oblique. This is a specimen of a rupture of that kind, in which, however, a portion of the tumour is situated in the way that I have mentioned to you, in the inguinal canal between the superior aperture and lower opening of that canal, and another portion has passed through the inferior opening and descended into the labium pudendi. I mentioned to you that in the other variety of inguinal hernia the parts are protruded directly through the external ring; that they pass out of the abdomen on the *inner* side of the epigastric artery, so that the artery is seated on the external side of the mouth of the sac, and that this is called *internal inguinal* hernia, or *direct inguinal* hernia, inasmuch as the parts come out in a straight course. Now, in the latter case, that is in the direct or internal inguinal hernia, which is the least common of the two kinds, the hernia never obtains a considerable magnitude, for it pushes before it, and is covered by the fascia transversalis, and thus it cannot increase to any great extent.

Now, these differences are rather important in reference to certain anatomical points, and, more particularly, as to certain questions that arise in executing particular parts of the operation.

Proper Situation for a Truss.—The proper place for the application of the pad of a truss in a reducible inguinal hernia, is the part at which the viscera are first protruded from the abdomen. In the case, therefore, of the most common species, that is, the external or oblique inguinal hernia, the situation for the pad of the truss in the incipient state of the complaint is midway between the angle of the pubis and the anterior superior spine of the ilium, where the viscera are first protruded. In the case of direct or internal inguinal hernia, the pad must come immediately over the ring of the obliquus externus, that is immediately above the angle of the pubis. But in either case you have to ascertain, by pressure with your hand, the exact place where the viscera protrude, and that is the point to which the pad of the truss is to be applied. In taking the measure of a patient for a truss, you have to measure from the point at which the parts are protruded in a circular direction round the body; and a string carried in that way will be proper enough for the measure to be given to an instrument-maker. It will be well, however, to mark the place where the pad is to press upon the opening in the one case, midway between the anterior superior spine of the ilium, and the angle of the pubis, and in the other above the angle of the pubis as well as the distance from this point to the anterior superior spine, for that will give the length of the curved part of the truss in front.

Operation for Strangulated Hernia.—In the operation for strangulated inguinal hernia, you must carry the external incision in the direction of the long axis of the tumour, commencing at about an inch above the opening at which the parts are protruded, and carrying it down in a straight line along the middle of the tumour towards the lower part of it; it is not necessary, however, to extend the incision throughout its whole length. That part where you principally want room, is just where the parts have been protruded from the abdomen; there-

fore begin, at all events, at about an inch above that, and then carry your incision downwards in the long axis of the tumour through the skin. With an ordinary pair of forceps and scalpel, you then carefully cut through the adipose substance which intervenes between the surface of the sac and integuments. In the external inguinal ring you have to cut through the skin, adipose texture, and coverings, which are often thin and separated into several laminæ, composed of the cremaster muscle and tunica vaginalis of the chord. You will cut through them cautiously, stratum by stratum, until you come to the sac, and when you are approaching it, you will cut with every possible degree of caution, for if you were to cut incautiously through the peritoneal covering, you might wound the intestine. As you approach the sac, you lift up the different layers with a pair of forceps and cut through them, when thus elevated, with a knife, carried nearly horizontally, and in this way there is not much danger of wounding the protruded parts, the hernial sac being separated from them by the fluid effused into it, so that when you cut through the peritoneal covering, a certain quantity of fluid, generally of a reddish colour, escapes; sometimes there is a considerable quantity of this fluid, and usually it is enough to prevent all danger of this kind. When you have thus cut into the sac, extend the opening upwards and downwards, so as to expose the parts freely. It is not necessary to cut through the integuments and the sac the whole length of the hernia. I pointed out to you in the last lecture, that the component parts of the spermatic chord are sometimes separated in the case of hernia, and that sometimes either the vas deferens, or some other parts of the chord, pass directly over the sac, so that if you were in every instance to cut down to the very bottom of the tumour, you might endanger the chord, or the vas deferens. Such a complete division of the tumour is not necessary; if you expose the sac for a space of two or three inches, including the ring and the part just below it, that will answer every purpose. When you have completely exposed the contents of the sac, you introduce the finger and ascertain where the stricture is situated that confines the parts and prevents their return; your next object is to make such a separation of that stricture as to allow of the replacement of the protruded parts. There is some difficulty in accomplishing this part of the operation. Unless the parts were very closely girt by the stricture, you would be able to return them without opening the sac, and of course the hernia would not then be strangulated. You would expect, therefore, where you cannot accomplish this, to find a structure so complete, that you cannot introduce even the extremity of your finger, therefore you must divide it by means of a cutting instrument conveyed in by means of a director; and as the situation of the stricture is generally deeper than the external wound you have made, and perhaps higher up, you have got to divide the stricture at the part where you cannot see it, and where your proceeding must be guided by your anatomical knowledge. Recollect that intestine, perhaps omentum, are contained within this stricture, and that there may be only just sufficient room for the passage of the director, and that you have got to introduce a cutting instrument on that director; take care, therefore, that you do not wound the parts where it is thus introduced. In doing this part of the operation, you must be sensible that a considerable danger exists, and that a good deal of care is necessary, even although you have operated repeatedly, in order to enable you to avoid it. I think that a person will hardly find, even after long experience, that he can perform this part of the operation, without feeling it necessary to adopt all possible precaution to prevent the intestine being wounded, the part to be operated on embracing the protruded viscera very closely, and being completely out of sight. You introduce then a director under the stricture, and, in order to avoid as much as possible the danger I have mentioned, you will find it expedient to employ a director with a deeper groove than that which you ordinarily find in a dressing-case of instruments; a steel director, with a very deep groove, is to be passed in; it passes easily into the stricture, and the depth of the groove conceals the blade of the knife which you employ, so that there is very little risk of wounding the parts if you operate cautiously; at the same time you must employ the fore-finger of your left hand, or the finger of an assistant, who, with his finger or the handle of a scalpel, presses the intestine out of the way of the knife when you are executing this part of the operation; and this, I think, you will find the best way of proceeding. A particular kind of curved knife has been recommended by Sir Astley Cooper for performing this part of the operation. Of course you are aware, that under circumstances where you have not got a proper instrument to divide the stricture in incarcerated hernia, you must divide it with the common bistoury, which you have curved, but this instrument, which I now show you, is calculated to perform what you want more safely; it appears like an ordinary curved knife, but it is blunt for half an inch at the point; then there is a cutting edge for about three-quarters of an inch, and the rest is blunt. You carry this knife into the part

flat, then you turn up the cutting edge against the stricture, and cautiously divide the constricted part. This is an instrument that may be conveniently employed in that part of the operation.

It is not necessary to make an extensive division in strangulated hernia; all you want is such an opening as will allow you to replace in the abdomen the parts that have been protruded and confined by the stricture. A division, perhaps of a quarter of an inch, will enable you to accomplish the purpose, and if it will, it is not necessary to divide more than that. The further you divide the parts in the operation, the more they are loosened, and the greater probability is there of a return of the hernia after the operation, and of its acquiring a considerable magnitude; by limiting the division just to the extent absolutely necessary, you avoid that risk. You will, therefore, introduce the knife, keeping the edge of it closely applied against the part that constitutes the stricture, and cautiously divide a little of that part. When you have made a small division, attempt to return the parts, and if you find that the opening is not adequate to their return, you must repeat the incision, making the division a little larger.

In the case of inguinal hernia, you may find the stricture either in the tendon of the external oblique, or it may be formed at the superior and internal abdominal ring, by the lower edge of the internal oblique and transversalis; or by the neck of the sac, altered in the way that I have already described. If it is formed in the two ways I have last mentioned, either by the edge of the obliquus internus and transversalis, or by the altered neck of the sac, you may find that it will be situated considerably within the parts you have divided, and that you have to introduce your finger and divide it at a considerable depth.

The only other point of consequence to attend to, in the case of inguinal hernia, is the direction to be given to the instrument in performing this part of the operation. And here you must recollect the distinction I have made between the two kinds of rupture; in the more common species, the epigastric artery will be situated on the inside, while, in the less frequent kind, it is situated on the outside of the neck of the hernial sac. In the case of external inguinal hernia, you might safely divide the stricture upwards and outwards—that is, towards the anterior superior spine of the ilium; but, in the other species, if you were to divide the stricture in that direction, you would run a great risk of wounding the artery; if you were to divide it upwards and inwards—that is, towards the linea alba, in the ordinary kind of inguinal hernia, then also would you endanger the artery. In order then to avoid all risk of this occurrence, you should divide the stricture directly upwards—that is, in a line parallel to the linea alba; and the artery will then be perfectly safe, whatever kind of inguinal hernia you may be operating upon; you are to cut not upwards and outwards, nor upwards and inwards, but divide the stricture in the middle, in a direction parallel to the linea alba—that is, straight upwards, and then there is no danger, in either kind of inguinal hernia, so far as the artery is concerned.

Having then divided the stricture, you make a gradual pressure on the protruded parts, and you find that they re-enter immediately the cavity of the abdomen; the intestine passes into the abdomen with the greatest facility, and you can easily return the omentum also, when that is protruded.

Sometimes you find the intestine very much discoloured. You find it of a deep livid red—a dark-brownish red, of a deep chocolate-brown colour; or of a livid tint hardly distinguishable from black, and all these discolorations may exist, without any serious change in the state of the coats of the intestine, that is, without loss of vitality in them. Under such circumstances, the peritoneal covering retains its ordinary pale appearance; and if the vessels are full of blood, by making a gentle pressure on them, in the direction of the venous circulation, you can squeeze on the blood, and the vessels will again become full, showing that the vitality still exists. If the parts should have become mortified, they assume a dirty brownish hue, and the peritoneal covering has lost its pale colour; and there is generally this distinction between mortified parts and those that are not mortified, that in the former case, if you squeeze the blood out of the vessels, when they do not fill again, so as to show that the circulation goes on; and usually when this serious change has taken place, there is more or less of that disagreeable fetid smell, which commences when mortification has supervened. A portion of intestine simply changed in colour, however considerable that change may be, may be safely returned into the abdomen; but if it has actually lost its vitality, it would be very improper to replace it eventually, because it would become separated, the contents of the alimentary canal would escape into the abdomen, and the patient would lose his life. If the intestine has lost its vitality, you may make a free incision through it: by so doing, you allow the alimentary canal to unload itself; you let out the fæces and flatus which fill it above the stricture, and thus you give great relief to the patient. With respect to the omentum, if that is in its natural state—if it possesses its natural redness and softness of

texture, you may replace it in the abdomen. Frequently, however, the omentum has become considerably thickened and indurated —formed into an unnatural mass which you cannot easily unfold, so as to make it exhibit its natural state, the neck being especially condensed and formed into a pretty firm thick ring. If a piece of omentum in this state were returned into the abdomen, you would find it become a source of irritation, you would find the parts inflamed, that suppuration would be produced in the abdomen, and that the returned omentum would thus become the cause of great danger to the patient. To avoid this, after returning the intestine, you must cut off the piece of omentum that is thus situated; and having done so, take up the vessels one by one, and tie with small ligatures any that you may observe to bleed. Sometimes the omentum has been left in the sac: under such circumstances it will separate occasionally, after the performance of the operation; or the part that has been thus left, will become covered with granulations, and form a portion of the cicatrix. I think it best, however, if it is particularly altered, either by long continuance in the hernia, or by the change occasioned by the strangulation, to cut it off, and take up on the cut edge the bleeding vessels which you may find troublesome.

Having thus disposed of the parts contained in the hernia, you bring together the sides of the wound in the usual way, and you generally find it better to unite them by sutures. The situation of the wound is not convenient for union by adhesion; the edges can be brought carefully together and united by sutures. Then the most advantageous dressing is, soft cloths dipped in cold water; or perhaps immediately over the wound, you may lay a rag spread with simple cerate. In some instances particularly, if the parts protruded were large, there may be such a tendency in them to escape again, that you require some pressure to be made in the situation of the abdominal ring; in this case, after uniting the wound by sutures, you may employ compresses of rag over the ring, and produce as much pressure there as may be found necessary to prevent a return of the hernia; it is expedient also to direct the patient, whenever he moves in bed, or has occasion to use the bed-pan, to put his hand over the part and make slight pressure, for the purpose of preventing any protrusion under such exertion.

I have spoken to you of the course that should be adopted, in cases where you find the intestine not mortified; the same course may be adopted if the changes in the hernia, visible externally, previous to the operation are such, as to lead you to expect that mortification has occurred. If the integuments have become red externally, if the violent symptoms have subsided, and the pulse has become small, feeble, and intermittent, and at the same time the patient is covered with a clammy sweat, you may expect to find that the parts protruded have undergone mortification, though, on the other hand, this change may have taken place where these symptoms have not exhibited themselves before the operation. The parts may be mortified, although there be no appearance of it externally, and although there may be no particular alteration in the pulse; but it is always a very formidable sign when you see a redness, and more particularly, a livid state of the integuments. As long as the protruded viscera remain in their natural state you never have the integuments inflamed, and, therefore, when you see the parts covering the hernia thus discoloured, you may be sure that not only are the protruded parts pretty considerably inflamed, but that they have undergone mortification. Under such circumstances, you may deem it necessary to make an opening, and, perhaps, give the patient that relief that a free division of the mortified parts will afford; that is all you can do in such a state of danger.

Now, in many cases it is found that the mortified part of the intestine separates, and that the contents of the alimentary canal are freely discharged through the opening that is made either in this way or by the surgeon. After a time the discharge of the fæces through the wound diminishes, and the patient has fæcal discharge in the natural way; and in certain instances the discharge through the wound ceases entirely, the contents of the alimentary canal take their natural course, the wound closes up and complete recovery ensues. In other instances the patient recovers his strength, but the wound does not close; the contents of the bowels are permanently discharged through the wound, and, in fact, the case then becomes, what is technically called,

Artificial Anus,—a case in which the fæcal matter is discharged at the groin, or any other situation where the hernia has existed. This, of course, is a state extremely annoying to the individual, and which it would be very desirable to remove. In some instances an operation has been performed which has had the effect of relieving the patient from this disgusting infirmity, by producing a closure of the unnatural opening, and procuring a course for the fæculent matter in the natural direction. At first sight it would seem rather difficult to understand how the natural passage of the contents of the bowels could be restored after a portion of intestine had mortified; but by examining the circumstances attending cases in which this has taken place, the

process which nature adopts becomes tolerably obvious. If a portion only of the diameter of the intestine is included in the stricture, we find that part of the mesentery corresponding to the portion included in the stricture, to be drawn down towards the inguinal canal; and if a third of the diameter of the intestine is included in the stricture, the passage of the alimentary matter is completely impeded because the internal and muscular coats form a permanent fold on the inside of the intestine, opposite the part where the mesentery is drawn down. [*The lecturer exhibited by a diagram the manner in which, according to his statement, an artificial anus is formed, and the obstruction occurs.*]

Now, in certain cases, the course we find to take place is this,—the inflammation that has proceeded to such an extent as to produce mortification, produces also adhesion between the sides of the sac and the parts in its immediate vicinity; which thus become adherent to it, after the stricture has been relieved, and the bowels have been emptied; the mesentery and portion of the intestine are gradually drawn back into the abdomen, and thus a portion of the sac remains adherent to the bowel, supplying the place of the part which has been lost; [*explained again by diagrams*;] and in this manner the integrity of the alimentary canal is re-established.

The contents of the bowels coming down in the direction chalked out in this diagram, are prevented from going into the lower part by the prominence which you here see, but they pass into this part of the sac, and thus the course of the alimentary contents is re-established, where the radical cure has taken place.

This circumstance is pointed out by Scarpa; who observing the portion of the hernial sac that is drawn in by the gradual retirement or recession of the intestine, to have a funnel-like shape, calls this the *membranous funnel-shaped cavity*, and points out how the alimentary substances coming down through this membranous funnel-shaped cavity, pass on into the lower part of the intestinal canal.

There are some instances, however, in which the two portions of the bowel become situated very nearly parallel to each other, and where this process of repair cannot take place. Now I would suppose the protruded portion of the intestine to be represented by those two lines, &c. [*Referring again to a diagram to show the parallel situation of the two ends of the divided intestine.*]

Here the alimentary contents must come out of the opening; therefore, in such a case, the discharge of them through the artificial anus must be permanent. But at the same time, if you could unite those two portions of bowel for a certain space from this opening within the cavity of the abdomen—if you could make them adhere together for the space of a couple of inches above the wound, you would then have a direct opening from the one to the other; that is, if you could remove a certain portion of the septum that separates the two, you would then have the contents coming down from the upper portion to the lower; and the same process would take place where the ends of the bowel, instead of being parallel, were united by a very acute angle—if you could destroy the portion that forms the septum between the two, then the contents would go from the superior to the inferior part. Now this object has been accomplished by a very ingenious operation, devised and practised in a great many cases by Baron Dupuytren, and I think that it does great credit to the ingenuity of the inventor. In the first place, he ascertained by examination, that the cause which prevented the passage of the contents of the bowels, from the superior to the inferior part of the canal, consisted in the projection of the coats of the bowel between the two openings, and he considered what process could be employed to destroy that projecting part. He then hit upon employing a kind of forceps which admit of being opened at both ends; one end is introduced above the divided bowel and one below; and then a certain portion of the coats of the upper and lower ends where they lie in close contact (when the ends are lying parallel, or of the projecting part when they are united at an acute angle) is embraced between the two ends of the forceps, which are so constructed, as to produce a pressure upon the parts embraced, which will destroy their vitality. When the surrounding parts have been inflamed and have suppurated in the ordinary way, the portion thus pressed becomes loose and separates, and a free communication is established between the upper and lower ends of the bowel. Now I shall just chalk this process out to you on the board. [*The lecturer here made a diagram of the parts.*] Now, that is the operation which has been performed for the removal of an artificial anus by Baron Dupuytren in many instances. I have not had an opportunity of trying it myself, for to say the truth, I do not find those cases of artificial anus to be very numerous, and all cases in which they exist, do not admit of its performance. It is necessary that the two portions of bowel should either be united at a very acute angle or lie parallel to each other, in order to allow of the performance of this operation, and I have not met with a case in which the parts were thus situated. I would therefore beg to recommend you, if you have a case of this kind to operate on,

to consult the account Baron Dupuytren has lately published of this operation, in a new French Medical Dictionary, (*Dictionnaire de Medicine et Chirurgie,*) in the *third* volume of which, is the article to which I beg to refer you.

Prolapsus of the Intestine from Artificial Anus.—In the case of artificial anus, where there is a regular discharge of the contents of the alimentary canal through the opening, it sometimes happens that the intestine prolapsus at that opening, the same kind of prolapsus takes place that may occur at the natural anus, and which constitutes prolapsus ani. It is everted in the same manner as the finger of a glove may be; and you may have a large portion of it descending to the extent even of some inches. You may have a *double* prolapsus; one at the superior and one at the inferior edge of the intestine. Such a protrusion may be easily returned, but it is difficult to keep it replaced.

Stercoral Fistula.—After an opening of this kind has been closed, or at least after it has been so far closed that the contents of the bowels pass in their natural channel, it sometimes happens that a minute opening remains, through which there is occasional discharge of a little yellow fetid fluid that has been called fæcal—a fæcal fistula, which has sometimes been found extremely difficult to heal.

Inguinal Hernia in the Female.—Inguinal hernia in the female is essentially the same affection, and the operation for it is the same as in the male; I have, therefore, nothing particular to add to what I have already said. In considering the operation as performed in the female, however, for inguinal hernia, where the intestine descends through the upper or internal opening of the canal, and is strangulated there, without passing through the external ring, it is so far peculiar, that if you were to operate there, you would have merely to make an opening through the external oblique muscle; as to the rest, it is the same as in the other case.

Hernia Congenita.—There is a case in which the protruded parts are found in contact with the testicle, and this is called *hernia congenita*. It takes place thus: the communication between the tunica vaginalis and cavity of the abdomen, which exists immediately after the testicle has descended into the scrotum, which does not become closed in such cases, but remains permanently open; in these instances the tunica vaginalis is, in fact, a kind of process or continuation of the cavity of the abdomen. And in individuals in whom this process of peritoneum, leading from the inguinal canal down to the testis, has not become closed, if a hernia takes place the parts will pass through that opening, and come to the testicle. The term hernia *congenita* would lead you to suppose that it existed at *birth*, which, however, is not the fact; the hernia does not take place till some time after birth, perhaps not till the patient is some years of age; but the state of parts which produces it exists at birth, although the hernia itself does not then take place. When you come to lay open the sac, you find that the parts lie in contact with the testicle; and, of course, previously to the operation, you do not find the testicle situated free and below the protruded parts, as in the case of ordinary inguinal hernia. Here is a specimen of a case of this kind; here is the sac laid open, and you observe the testicle projecting into the lower part of it.

The remark which I have made to you respecting the distinction between hernia congenita and common inguinal hernia, in respect to your not being able to feel the testis separate from the rupture, reminds me that I did not, in the commencement of the lecture (as I should have done), mention to you the particular.

Symptoms and Diagnosis of Inguinal Hernia.—I began by speaking of the operation, without having mentioned what the symptoms are by which you are best able to distinguish inguinal hernia from other affections which take place about the same parts. When a tumour exists in the anterior part of the inguinal region, or when you see a tumour in the scrotum which has previously existed in the groin, and descended into the scrotum; when you find, on examining that tumour, that you trace it up to the ring, and that it passes into the ring; when you find that the testis is situated below it, and quite free, and that the spermatic chord is situated along the middle of its posterior part, and can also be pretty freely felt; when you find in such a tumour, that the circumstances exist which I have mentioned as the general symptoms of hernia—namely, that the tumour disappears under pressure, or when the patient is in the horizontal position, and reappears when he is in the erect position, or when the pressure is removed—that it increases on coughing, or when the individual holds his breath, then you may be satisfied that the case is one of inguinal hernia, or bubonocele.

There are, however, various other complaints attended with swelling, occurring in the same situation, from which it is necessary you should be able to distinguish the tumour formed by an inguinal hernia, and in certain instances the distinction is by no means easy. In the first place, there is hydrocele, the tumour formed by which is, however, generally very different from that of inguinal rupture; there is hardly any

probability of confounding the two. Hydrocele commences from below and ascends—a rupture commences above and descends. The surface of a hydrocele is smooth and uniform; the sense of fluctuation, the obvious existence of a fluid, as evidenced by the touch, form an almost complete distinction between the two. The tumour of hydrocele terminates above, and is bounded at the upper part of the testicle, while the tumour of hernia is not so bounded, but is continued into the abdominal ring. There are some instances, however, in which the tumour of hydrocele ascends along the front of the spermatic chord, and even passes into the ring, so that the mere limit of the tumour above is not a sufficient distinction; and, indeed, you will often find it advantageous to do what I recommended to you before—namely, examine the tumour with a candle, when the transparency of the fluid will be immediately perceptible, if it be hydrocele. Varicocele is a swelling of the spermatic chord, which may be confounded with hernia. The tumour of varicocele is made up by the enlargement of a congeries of vessels, or distended and enlarged veins, but the feeling of this to the fingers when it exists is so peculiar, that it hardly admits of being confounded with hernia. There is, however, this confusion between the two, that a varicocele like a hernia recedes in a great measure when the patient lies down, because the veins then become empty, and the tumour returns when the patient is erect; but, on the one hand, the tumour will not return on coughing, so long as the patient is recumbent; and, on the other, it will be reproduced when he stands up, even though the abdominal ring be closed with the fingers; the difference, however, of feeling between the two is sufficient to enable you to distinguish them. You should also be aware of the irregularities that take place in the descent of the testicles. The tumour thus produced might be mistaken for a hernia, because it is sometimes attended with pain; you should therefore examine the scrotum carefully, in order to ascertain whether both testes have descended or not. An encysted tumour of the spermatic chord might be confounded with hernia; it is however very rare, and is so distinct that it hardly admits of being confounded with a hernial tumour.

VACCINATION.

It is stated in the *Journal Universel*, that Dr. Barres, Jr. of Bordeaux, vaccinated a child three years of age, making four punctures, from which no effects resulted until about two months afterwards, when two genuine vaccine pustules were developed, from which other children were successfully vaccinated.

RUPTURE OF THE SPLEEN INTO FRAGMENTS; WITH EFFUSION OF BLOOD INTO THE PERITONEAL SAC, THE RESULT OF HARD DRINKING.

By Alex. Thomson, *M.B.*

Circumstances relating to the last illness but one, as related by Mr. Vickers, *Surgeon, of* 9, *Thayer Street, Manchester Square.*

"George Golding, aged 39, by trade a farrier, first applied to me on Friday, 26th of February, labouring under the following symptoms: pain and tightness across the chest, accompanied with dyspnœa; skin hot, tongue moist, and pulse exceeding 100, and very hard.

I ordered 20 f. ʒ of blood to be taken from a large orifice in the arm, and gave an active aperient consisting of calomel and salts.

Evening. The symptoms were increased. VS. ad f. ʒxvj. Mist. cathartica et antim. tartariz. secundis horis.

Feb. 27. To-day the pain is returned; increased dyspnœa; pulse 120; bowels freely evacuated. VS. ad f. ʒxx. Repet. medicamenta.

Evening. The symptoms mitigated, the skin cool, the pulse softer and less frequent, with profuse perspirations.

28. To-day the cough is very troublesome, but the general symptoms ameliorated. Ordered emp. vesicat. pectori, and to take a mixture of salts, syr. scillæ and inf. ros., and pulv. Doveri gr. x. h. s.

March 1. Better; continue medicine.

2. Has a return of difficulty of breathing, unattended with pain; pulse quick.

℞ *Potassæ nit.*, ʒjss;
Magnes. sulph., ʒiij;
Digital. tinc., ʒj;
Vini ipecac., ʒij;
Aquæ, ʒvj;
De quo sumat., ʒj 4tis horis. Rep. pulv. ipecac. c. hor. som. s.

3. Cough incessant, with tightness across the chest; pulse 100, full, and hard. VS. ad lbj. Ordered a pill, with ext. papav. pil. scillæ c. ää. gr. ij, ant. tart. gr. $\frac{1}{12}$, to be frequently taken. Continue medicine. Cathart., with ant. tart. ut antea.

4. Bowels freely opened; the tightness and breathing relieved; pulse better. Continue medicine.

Omittat mag. sulph., ʒss in misturâ.

5. Better. Rep. med. 6tis horis.

9. I observed, for the four or five preceding days, a disposition to sit up in bed. On asking him the reason, he said he felt a great uneasiness and difficulty of breathing, which was always relieved on sitting up. Cough still difficult, with abundant expectoration. Ordered the pills as before, with

an addition of pulv. digitalis gr. vj, in twelve pills.

13. Pain returned in the side; in every other respect improving. Apply emp. lyttæ lateri dolenti.

15. Cough and pain much relieved; expectoration very profuse and purulent; night perspirations increased; pulse small, 100. Ordered broths and jellies, with bark and acid. In a few days he was able to walk out.

19. Called at my house, and I found him convalescent."*

Symptoms after the Rupture of the Spleen.

The subject of this case was attended by Mr. H. Ancell, of 196, Oxford Street, to whose kindness I am indebted for the following details regarding the habits and symptoms of the man:—

G. Golding, aged 39, married for seventeen years, but without children, was a labouring blacksmith, used to hard and constant labour, easy in his temper, quiet and inoffensive, but addicted to hard drinking, having, for many years, been in the habit of taking between the time of his going to work (half past six A.M.) and his breakfast, from half a pint to one, and, occasionally, one pint and a half, of rum, which he usually took at two separate draughts, each portion of the rum being mixed with half a pint of porter. Notwithstanding this habit, he had generally enjoyed good health, although his complexion, always of a deadly pale hue, seemed to indicate the reverse, and had a regular evacuation of his bowels every morning previously to going to his work. It is about ten or eleven years since he was seized, at about the commencement of the Whitsuntide holidays, with an attack of hemiplegia, from all the consequences of which, with the exception of a slight but permanent distortion of the mouth to one side, he was liberated by the end of three weeks under a course of bleeding, purging, friction, and warmth. His health was fully re-established at this time, and remained unimpaired till about the two months back, when he laboured under an attack of pleurisy, from which, however, he was entirely recovered by the aid of repeated bleedings and of the ordinary remedies, at the end of fourteen days. Since this time he rapidly recovered in health and strength, became fat, and had so increased an appetite, that it had of late become a subject of remark to his fellow-labourers.

April 30. Half past nine A.M. Mr. Ancell was called upon to visit this man, whom he found sitting by the side of his forge in a bent position, with the elbows resting on the knees, with a pale and exsanguine countenance, covered with a profuse cold sweat, with the pulse full, feeble, and about 120, but regular, and with cold extremities, complaining of nausea, sense of weight in the epigastrium, and profuse cold perspiration. He had had his usual morning evacuation of the bowels, had remarked to his comrades, on joining them, that he never felt better in his life, had taken, as usual, two draughts, each consisting of one-eighth of a pint of rum and half a pint of porter, had been suddenly seized, shortly before Mr. Ancell's arrival with sickness, but had not vomited. He was ordered home to his lodgings, and to go to bed immediately.

At ten A.M. He was in bed, and nearly in the same state, but had ceased to perspire. The pulse was stronger, and 130, but still regular.

℞ *Hyd. subm.*, gr. vi, statim sum.;

℞ *Sodæ sulph.*, ℥j;
Sennæ infus., f. ℥iij;
Avenæ decocti, f. ℥viij. M. ft. enema statim exhib.

His wife was directed to take word to Mr. Ancell of any change in the symptoms, and of the operation of the medicines, but neglected to do this, so that he was not visited again until six P.M.

At six P.M. By this time the medicines had operated powerfully both on the bowels and on the kidneys, the evacuations from both of which were of a natural aspect; he had been able to get out of bed to the night-stool, but had found, whether up or in bed, most ease from retaining himself in the posture in which he was first found by Mr. Ancell. The perspiration had not returned since the morning; the extremities were still colder than natural, but the trunk remained at about the ordinary temperature. A degree of fulness, extending from the left hypochondrium downwards into the left iliac region was now visible, the tongue was dry, the mouth parched, the pulse unaltered, except in frequency, being now 135 in a minute, and the respiration laborious. He complained still of nausea, and of violent pain, more acute in the epigastrium and in the left hypochondrium, as far down as a line drawn horizontally across the umbilicus, but diffused over the whole abdomen, and much increased upon pressure.

From the continuance of the pain, it being increased by pressure, and so generally diffused over the abdomen, from the posture in which the patient found most ease, and from the sudden invasion of the attack, Mr. Ancell was induced to refer the disease to abdominal inflammation, and more particularly to peritoneal inflammation, and accord-

* I copied the above *verbatim* from the account which Mr. Vickers furnished to Mr. Ancell.

ingly made a free opening into the median basilic vein, from which the blood at first flowed freely, but suddenly stopped after two ounces had been procured, and could not again be induced to flow, although no syncope was induced. Mr. Ancell now began, from a consideration of this fact, added to a reconsideration of the symptoms, to suspect that some great vessel had given way in the abdomen, and to consider the case as hopeless.

At nine P.M. The pain of the abdomen was much more intense, the respiration more laborious, the lips and countenance exsanguine, the extremities quite cold, and the pulse feebler, but quicker. The following draught was given with a view to relieve the pain :—

℞ *Opii tinct.*, ℥ xxx;
Lavend. spir. comp. ℥ xxx;
Æther. nit. spir. ℥ xxx;
Camph. mist. f. ʒx. M. ft. haust. stat. sum.

May 1: one A.M. The pain having still increased, and the other symptoms remained unaltered, he expired, having retained perfect possession of his faculties to the last.

Mr. Ancell called upon me to open the body for him, stating to me that he suspected effusion of blood into the abdomen. I myself, on hearing the symptoms, suspected rupture of some part of the intestinal tube.

May 2. Morbid Appearances.

The body was well proportioned, plump, and solid. The thorax resounded well in every part when percussed. The left leg had upon it the remains of an impetiginous eruption, which covered a considerable portion of the anterior and exterior sides of the limb. The integuments of the cranium adhered very firmly to the pericranium. The cranium was thick and ivory-like in its texture, having very little diploe. The dura mater had its minute arteries considerably more injected than usual. The arachnoid membrane was much diminished in its transparency in every direction, and separated from the pia mater by a considerable quantity of colourless serum, which was also seen plentifully between the convolutions both of the cerebrum and of the cerebellum. The pia mater adhered so laxly to the substance of the brain as to be removable by the aid of the slightest effort, and had its arteries full of blood, but its veins quite empty. The cerebrum was unusually firm and unyielding, both in its medullary and cineritious substance, and did not present many red points on its sections. The cerebellum, however, was remarkably soft, and apparently quite destitute of elasticity, breaking down under very slight pressure of the fingers. The medulla oblongata and pons varolii were nevertheless exceedingly, nay, unusually, firm. The origins of the encephalic nerves were remarkably white and firm. There was a considerable quantity of fluid at the base of the cranium, between the arachnoid membrane and the dura mater, or in the true sac of the arachnoid. The lateral ventricles were considerably dilated and filled with a limpid, almost colourless, serum, and yet the processes of cerebral matter in them were unusually firm; the veins of the vaults of the ventricles, and those of the fornix and septum lucidum, contained blood, but those of the plexus choroides and the venæ magnæ Galeni were quite empty, as were also the arteries of the plexus. The pineal gland was larger than usual, contained in its capsule some limpid fluid, and in its centre one large round grain of a hard, smooth, stony concretion. The third and fourth ventricles also contained fluid of a similar description to that in the lateral ventricles. The muscles of the thorax and abdomen were very pale, and, together with the cellular tissue of the same parts, remarkably destitute of blood. The lungs, though covered with rather more subpleural black spots and reticulations than usual, were nevertheless remarkably healthy; adhered slightly by old adhesions on both sides to the upper part of the parietes of the thorax, and slightly to the diaphragm; had in each, at about the centre of their lateral aspect, a small puckering of the pleural investment, resembling a cicatrix, within which the substance of the lung, to the extent of a few lobules, was condensed and indurated, as though there had been small cavities which had been obliterated. The pericardium was healthy, though unusually loaded on its exterior with fat; it contained about six drachms of greenish transparent fluid. The heart itself was natural in size, unusually loaded along the course of its vessels with fat, exceedingly pale, and rather of a yellowish-white colour in its substance, which was remarkably flabby, soft, lacerable, and adhesive to the fingers. The lining membrane of its cavities was opaque in many parts. The mitral and tricuspid valves were opaque, but not thickened, though the ligament surrounding the auriculo-ventricular orifices was indurated and semicartilaginous in some spots. The semilunar valves, both of the pulmonary artery and aorta, were opaque, those of the former not being thickened, of the latter thickened and semicartilaginous round their attachments; all were imperfect, having greater or less perforations towards their free or floating margins; that these perforations were not the result of the agony of death, nor even very recent, was evident from their edges not being ragged, from their not enlarging upon considerable force being used to cause them to do so, and because, by the aid of

the microscope the polished investment of the valves was traced to be continuous over the edges of these orifices.

The abdomen, when cut into, discharged a large quantity of limpid dark-coloured bloody serum, and when opened, displayed an enormous black coagulum, investing and attached to the lower or floating margin of the great omentum, extending from the right hypochondrium through the umbilical region into the left hypochondrium, where it was materially increased in size, so that when carefully separated, it would have filled a pint pot. When the whole of this extraordinary mass had been removed, a small orifice, not larger than the tip of the finger, was found to have been lacerated through the peritoneum and tunic of the spleen, at a spot where that organ had become attached to the diaphragm. No other aperture could be ascertained in the peritoneum.

The spleen, which was now carefully examined, appeared enormously large, attached by its superior margin and the whole of its exterior or convex surface to the diaphragm, and by the whole of its concave superficies to the cul-de-sac of the stomach. When carefully removed and cut across, its substance appeared lacerated into large triangular fragments, which were held together by a cement of dark black coagulum. The natural inference was, that the vessels in the substance of this organ had given way, an opinion strengthened by the fact, that these connecting portions of coagulum were continuous with a mass of one inch and a half in thickness of the same substance, which invested the whole of the organ, between the parenchyma of which and its fibrous envelope, it had been deposited. The substance of the angular fragments of the spleen yielded to the slightest pressure of the fingers, and broke down into a soft pap-like mass, so that the vessels could not be traced in its substance. The spleen, in truth, was not enlarged, but its vessels having given way, the blood was discharged into its substance, tore it into pieces, separated its parenchyma from the fibrous envelope, which it first violently distended, and then ruptured in two places, viz. at its most superior and at its most inferior part. From the former the blood found in the cavity of the abdomen had flowed; from the latter it had escaped in large quantity, and had separated to the distance of one inch and a half from each other the two layers of the descending mesocolon, to as far down as the commencement of the sigmoid flexure of the colon. It is highly probable that this mischief took place at two different periods; for the elasticity of the fibrous coat of the organ would have been sufficient to expel all the blood from its cavity as soon as it was lacerated, had not the blood coagulated within it been coagulated previously to the rupture. The liver was remarkably large, nearly double its natural size; externally firm and of a mottled appearance, not unlike that of coarse granite, internally of a pale, dirty, buff-yellow hue, with little blood in its vessels, and broken by very slight pressure into numerous granules. The gall-bladder was distended with bile of a natural hue. The intestinal and mesenteric vessels were more than ordinarily destitute of blood. The stomach contained apparently unchanged some gruel, which he had taken shortly before his death, had all of its coats remarkably thin, and its villous coat patched in several places towards the cardiac orifice, with spots about the size of a half-crown piece, covered densely with stellulæ of red vessels. The ileum, at about a foot before entering the cæcum, and at the point where it crosses the promontory of the sacrum, and where the mesentery becomes narrower, was furnished on its unattached side with an appendage in the form of a nearly cylindrical blind sac, about three inches in length from its extremity to its orifice into the gut, into which it opened with a somewhat dilated orifice, and to which in diameter and structure it was similar. It was doubtless an original malformation, as it possessed distinct and strongly-marked circular muscles and valvulæ conniventes of its own. It could reach when extended to its full length, to considerably, that is about an inch, below Poupart's ligament, and might therefore, had the man lived at some future period, have presented itself as a hernia. Its longitudinal muscular bands were continuous with those of the gut, from which it diverged, and proceeded lengthwise along it to its extremity, where they were lost in interlacing with one another. They also interlaced at the line of meeting on either side of the appendage, and thus strengthened its attachment to the gut, an object in which they were materially assisted by the circular fibres of the appendage nearest to its orifice, passing on either side from it on to the gut, and interlacing with one another. Those longitudinal fibres which did not divaricate to the appendage were remarkably strong, as if to prevent laceration of the gut in this part, when the appendage might be dilated with fæculent matter. Its vessels consisted of two of the final branches of the superior mesenteric artery, which on either side extended in a wavy direction to the point of the appendage, sending off branches to anastomose with one another. The pancreas and all the rest of the viscera were healthy in appearance. Mr. Ancell and two of his friends assisted me at this dissection.

The appendage to the ilium is to be seen in the Museum of the University of London.

Remarks.

The natural query is, Whence came the enormous force sufficient to lacerate the strong fibro-serous coating of the spleen? It would be idle to urge an obstruction in the vasa brevia, while the impulse of the heart remained unchanged, because the mass of blood, destined to pass through the immediate arteries of the spleen, would have passed off by anastomosing branches. There appears to me but one answer, viz. that there was a softened and enlarged state of the organ arising from inflammation, and that the pus occupying sacs in the spleen was absorbed and replaced by blood.

70, George Street, Euston Square.

DROPSY CURED BY BLEEDING, &c.

By EDWARD DIXON, Esq., *M. R. C. S.*

HAVING read your remarks on his late Majesty's protracted illness, and the account of the *post-mortem* examination by Sir Astley Cooper, with your subsequent comments thereon, I am induced to submit to your notice, and that of the profession, the case of Mrs. Sarah Routledge, ætat. 52, one of the domestics of Lord Darnley, who placed herself under my care in November last, in an advanced stage of ascites. She had laboured under that distressing malady more than two years, during which period she had been under the care of several medical practitioners, without experiencing the least benefit. On the contrary, the disease gradually increased to such an extent, that, to use a fashionable phrase, "her respiration had become considerably embarrassed," and her frame exhibited, when I first saw her, a very emaciated appearance. —A hectic flush pervaded her cheeks, the pulse was hard, quick, vibrating, and wiry, beating about 110 times in the minute, and intermitting at every fourth or fifth pulsation. A troublesome dry cough, accompanied by acute pain in the left side, the abdomen much distended with effused fluid, distressed her exceedingly. There was no *anasarca* in the upper or lower extremities. The bowels were constipated, and the urine scanty.

Treatment.—Having kept the bowels moderately relaxed for a day or two, on the 13th of November I performed the operation of paracentesis abdominis, and drew off three gallons and a half of a light straw-coloured fluid, about the consistence of sweet oil. She bore the operation extremely well, and her respiration was much relieved by it; she was put to bed, and not permitted to take any nourishment except water-gruel and tea.

On visiting her the next day I examined very carefully the right hypochondriac and epigastric regions, but could discover no enlargement or tenderness of the liver, or any symptoms indicating a morbid change in that viscus. The pulse continued hard and full, but not so frequent; pain was still felt in the left side on taking a deep inspiration, and the cough was troublesome. The result of this examination confirmed me in the opinion I had formed, when I first saw the patient; namely, that the serous effusion into the cavity of the abdomen had been occasioned by chronic membranous inflammation, either caused, or aggravated, by a morbid action of the heart, to relieve which, and prevent further effusion, cautious bleedings and other antiphlogistic remedies appeared the most rational treatment to adopt. I therefore drew sixteen ounces of blood from the arm, twenty-four hours after tapping, without producing the slightest distress; on the contrary, immediate relief was experienced, and the blood exhibited decided evidence of inflammatory action.

The following medicines were administered and continued for upwards of three months, and the result was most satisfactory.

℞ *Ext. colocynth. comp.* gr. ix;
Hydrarg. submur., gr. iij;
Misce, et divid. in pil. iij alt. noct. sum.

℞ *Acet. tart.*, gr. xx.
Acet. scillæ, ʒij;
Syr. papav., ʒss;
Aq. distill., ʒv.
Misce ft. mist. sumat. cochl. magn., duo 4tâ qq. horâ.

The urine, as might be expected, contained albumen, and, subsequent to the operation, the kidneys acted very freely, the patient voiding, upon an average, between three and four pints in twenty-four hours, which was considerably more than the quantity of fluid drank during the same period.

Her nourishment was confined to rice-milk, gruel, and tea. The bleeding was repeated twice within the first month, to the amount of sixteen ounces each VS., after which the cough was greatly relieved, the pain in her side subsided entirely, and up to this time the abdomen is to all appearance free from fluid.

This patient has, during the last eight months, had no return of dropsy; her appetite is good, general health much improved, and her limbs (which were emaciated and weak) are now fleshy and strong; and she

assures me she has not been so well for years.

I have selected this individual case from several others which I have met with in my own practice, equally successful in their results, and have endeavoured to make the narration simple and practical, in the hope that others, more able, may be induced to put the profession and the public in possession of their observations and experience in the treatment of this fearful and generally fatal disease.

Newman Street, Oxford Street,
August, 1830.

P.S. The above case is not published as anything new to the profession, nor to claim any originality on my part, although, in justice to myself, I must declare, that I was led to the treatment in similar cases by accident, not having read Dr. Blackall's or Dr. Ayre's book on this disease, until subsequent to the treatment of the case above cited.

EXPANSION OF THE HORSE'S FOOT.

To the Editor of THE LANCET.

SIR,—My attention has been called to a letter at page 687 of a late Number of THE LANCET, the writer of which has cited passages from certain authors, in order to prove that your reviewer was in error, in ascribing to Mr. Bracy Clark the merit of that important discovery, the elasticity of the horse's foot. These authors have long been perfectly familiar to me; but since the passages quoted, taken, as they are, without the context, would probably lead to incorrect conclusions in other minds, I must request the liberty of making a few remarks upon them. I apprehend it will be agreed, on all hands, that the proper question in such a case must be, To whom is the *merit* due? for, if the observation of King Solomon, "There is nothing new under the sun," were correct in his day, it is still more so in the nineteenth century, and particularly on subjects of a physiological nature. If the remarks of casual observers were allowed to supersede and invalidate the claims of those enlightened men whose lives have been spent in unfolding the importance of unnoticed truths before the eyes of the world, where, let me ask, would be the fame of Dr. Jenner, when it is ascertained that the fact which he laboured to substantiate was currently known, and had been frequently observed before his time; or what would become of the immortal renown of Harvey, if Milton's beautiful description of the circulation may be adduced as proof on the poet's part, that he knew of the fact physiologically, and deserved the honour? The same as regards inventions in mechanics; with a few glorious exceptions, they are but shades of improvement succeeding each other, as we may find by searching for the real inventor of the steam-engine, or the origin of printing. But he who has ever been much concerned in real discovery, will know what slight impediments may obstruct the progress of knowledge for centuries; and that, when on the very threshold of a discovery, our prejudices and education may prevent our seeing the simple truth which is beyond it. In most cases we must give to the first observer a share of merit, but a higher award becomes necessary, and it is to him who understands his subject upon principle, and proves it by undeniable experiment, that the gratitude of mankind should be paid; to the man who gives to an unheeded principle a useful *practical application*, and takes on himself the almost certain obloquy of encountering the prejudices of the world.

In this point of view let us contrast the respective merits and claims of Mr. Bracy Clark and his predecessors. The passages which have been taken from the works of Mr. Freeman and James Clark contain *all* that can be advanced in their favour; they observed that there was a degree of elasticity at the heels, which it is scarcely possible to handle the horse's foot without perceiving; but the latter hardly goes further than to say that the texture of the frog is soft and elastic, and the former confounds the elasticity of the *heels* with the play of the muscles of the leg; and though his book opens by making a fair step towards the truth, yet he finally loses sight of this expansion altogether, and leaves it as an observation he had made, bearing no important consequences, and leading to no valuable result. That they saw the "expansion of the *heels*," as they term it, I frankly admit, but they saw without understanding it; and their claims are about on a par with those of one who notices the existence of a new species of trees or plants, or an undescribed insect, but who leaves to more acute and patient investigators, the discovery of their true character, singular history, or valuable medicinal qualities. That they did not comprehend it, is clear; for after a few unconnected remarks on the subject, the meaning of which was in obscurity until Mr. Bracy Clark made known the principle, they proceed to give a very incorrect account of the anatomy of the foot; and, finally, they both recommend the application of a shoe, made like that in common use, nailed on both sides, and totally restraining that "expansive action" for which it is now pretended for the first time, that they deserve so much credit and commendation. If their works really conveyed

a truth of such importance, how did it happen that no one, until this day, during the lapse of forty years, has ever made the discovery in the book themselves? Perhaps the impression which the perusal of a book leaves on the mind, may be regarded as a fair criterion of the nature of its contents; yet it does not appear that either James Clark's, or Freeman's, work has ever conveyed a knowledge of the expansion principle to the mind of a single reader. Take, for example, Mr. Coleman (whose authority I am not much in the habit of quoting). The only observation elicited from the ingenious professor, after an attentive reading of Freeman's book, was as follows:—

Vide Coleman on the Foot, p. 32. "Mr. Freeman, who has published a splendid work on the foot of the horse, labours to prove that the whole spring of the animal depends on the navicular bone; but he has not observed the descent and spring of the small splint-bones,* the great degree of motion of the two sesamoids, and the greatest spring of all, the elastic attachment of the coffin bone to the crust," &c. &c.

This is allowing Freeman too little credit. I admit that he saw the expansive action of the foot, but he neither demonstrated it so as to be intelligible to others, nor made any practical application of it, and was utterly ignorant of those important considerations resulting therefrom which alone render such a knowledge of value to us. Mr. B. Clark was himself the first to observe† "that both Moorcroft and Osmer many years back had obscure ideas of the effects of the compression of the feet from shoeing," though, he adds, that the passages in which they allude to it had not struck him on first perusal, nor until after the principle became apparent to his mind. Left in this state, the elasticity of the foot required to be rediscovered, before it could be of service to mankind, or the horse. As an amateur, for he was no other, Mr. Freeman deserves greater praise than he ever received from his contemporaries in the veterinary profession, whom he constantly acknowledged as his teachers, and who, one and all, like himself, recommended shoes which opposed and prevented expansion of the horse's foot.

Let us now revert to the claims of Mr. Bracy Clark, with whom the idea of this discovery was perfectly original, as may be seen by his works; indeed, he arrived at a knowledge of it whilst making experiments to relieve contracted feet, and not by any chance or casualty, but by a course of regular induction. He immediately proceeded to establish his view by every possible means, viz., by a long and conclusive experiment related in his work on the subject, by a new and masterly description of the anatomy of the foot, showing, in the clearest manner, that the whole structure was subservient to the one principle of elasticity, by public lectures having the same object; and, finally, by insisting that the hoof, as an expansive organ, required an expansive defence to be consistent with nature. Of this doctrine he was the earnest and devoted champion for a number of years, standing almost alone against the opposition of the profession and the public, and occupied in perfecting its practical application, while his contemporaries were pursuing the phantom folly of frog-pressure and patent-shoes. It is needless to recount the successive steps in practice which led to the present expansion-shoe; nor the expedients of tips, removable shoes, and side-nailing, which were had recourse to for the same purpose; but it has been the main object of his life, and never was a discovery in physiology, and its application to practice, more exclusively due to the labours of one individual. While the concave and frog-pressure, the French and the Persian systems of horse-shoeing, are finding their grave in this country, it becomes the fashion with some veterinary surgeons to adopt the views of Mr. Clark, but, for the sake of novelty, with as much variation and as little acknowledgment as possible, in the means of effecting it. He cannot be sorry to see them adopted under any circumstances. But when it is no longer possible to refuse assent to new doctrines, the next measure has always been to impeach the originality or merit of the discoverer, which has at least one good tendency, that of raising the contested object in popular estimation.

It is always easy to dispute a claim of this nature, and to defend it requires a certain doubling of the matter and lengthening of the argument; and as it has made my explanation more tedious than would be desirable, I hasten to conclude by requesting the favour of an early insertion.

Your obliged, humble servant,

CHARLES CLARK.

Veterinary Infirmary,
Stamford Street, August 26th.

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* "The small splint-bones are two in number, and are nearly as long as the cannon-bone. They are connected to the cannon-bones laterally by elastic ligaments, and articulate above with the bones of the knee, in the fore extremities, and, in the hind extremities, with those of the hock."

† Vide his work on the foot, p. 11, 1st edition.

MR. PENWICK IN REPLY TO MR. TURNER ON THE OPERATION OF "FIRING."

To the Editor of THE LANCET.

SIR,—I BEG to offer a few remarks on Mr. Turner's opinions on firing, considering them of a dangerous tendency, and rendered much more so by being presented to the public through the medium of so widely and deservedly circulated a journal as THE LANCET. Notwithstanding Mr. Turner's assertion of his whole life having been sedulously employed in the veterinary science, I take the liberty of informing him, though I do not doubt but that he is well aware, there are many others that have been much longer, and equally zealous in the cause as himself, and who have had equally as good, if not better, opportunities of witnessing and, at the same time, are fully capable of judging of the effects of firing. In the rough country, says Mr. Turner, where he practised, (describing the worst kind of exertion, he alludes to hunting, which duty I believe the horse is not called on to perform oftener than twice or three times a week, and that only for about four months,) the most severe injuries and diseased joints occur, and on this he grounds his practice. Now in London alone, I mean to say, we have as many, if not more, diseases requiring the aid of the firing irons, than are to be found in the whole county of Surrey, and I positively assert, that, independent of my own practice, I have seen and known a great many horses successfully fired in the *common method* by various practitioners. Mr. Turner is even compelled to admit that firing is successfully resorted to all over the country, and if he would have us believe that they all and every-where cauterise through the skin, then Mr. Turner's *deep* method is nothing new; if they do not, why in his opinion it was of no avail whatever. Now if this had been the real state of the case, we can only reasonably presume that firing would have long since sunk into oblivion; but such is not the fact, therefore it must be admitted that the present mode that is practised by experienced individuals, is a good one; and this the profession at large will, I feel confident, admit, and even Mr. Turner, himself, I hope, on a little *deeper* reflection, if he is not too much wedded to his "monstrous presumption." But further, in order to put the case beyond all cavil, I will suppose Mr. Turner called on to fire a diseased fetlock-joint, a case of frequent occurrence; would he then make the *red-hot iron* pass boldly through the skin by crucial incisions till it reached the cellular tissue immediately covering the ligaments, tendons, periosteum, &c. He says, "To go thus fearlessly to work requires great dexterity, tact, talent, and *nerve*;" and I think he might as well have added, an eye possessing as great an optic power as the most powerful microscope, with a firing iron, although red hot, invisible to the naked eye, for he says it is to be done with all due caution; then, with all due deference to Mr. Turner's *deep knowledge*, let me inquire how he avoids cauterising and dividing the important nerves, arteries, and veins, that are immediately under the skin, and under which great part of the cellular tissue he describes also lies.* Why, in fact, if Mr. Turner fires so deeply as he would have us believe, it is evident that he must scorch or divide the horse's nerves with the actual cautery. But after all, Mr. Turner has not condescended to inform us in what period *his patients recover*, a point of the deepest importance to the owner; but he says it would fill a volume to describe the fore and after treatment, &c., which this *deep plan* requires. In this I sincerely believe him; and have not the least doubt but that many months must frequently elapse before the poor suffering animal is relieved from the effect of this unnecessary torture, to say nothing about the *sequel*.

It may be, perhaps, said, How can the animal be in torture if the nerves are divided? What! Are the inflammation and sloughing, which are certain to follow, nothing? But, says Mr. Turner, "neither I nor my brother ever suffer the excessive irritation and constitutional disturbance to steal a day's march on us." (Fortunate men!) In this I must confess, if true, Messrs. Turner are luckier practitioners than your humble servant; for in the few instances that have come under my observation when the animal may happen to have made a sudden and violent struggle before the iron could be withdrawn, and it has unfortunately gone through the skin and burnt the cellular tissue, but without injuring either tendon, ligament, or periosteum, I have invariably found inflammation and sloughing follow, and many months have even elapsed before the poor animal has been again fit for service, and in one instance I recollect the animal became nearly useless from the consequences. Mr. Turner wishes to make it appear that the use of the actual cautery is nearly abolished in the metropolis. In this respect he is really greatly mistaken; and during my practice of thirty years I have never known the utility of firing called in question, or fail in its effects in a general point of view; it is only condemned by those who could not properly

* Any person desirous of ascertaining this fact, may satisfy themselves by calling at my residence, where they will see the whole structure (skin excepted) exhibited at one view.

perform the operation, and I call upon Mr. Turner to inform me when and where he has ever seen the *highly-talented professor* of the Veterinary College, or the *assistant*, Mr. Sewell, *give the fire* in a skilful manner. I believe there is not an old farrier to be found in the country, that would not be ashamed of his *calling*, on seeing such specimens of firing as I have there seen attributed to the deputy. Now Sir, I do not pretend to any great knowledge in human surgery, but as Mr. Turner proposes firing through the skin by crucial incision, merely to set the over-distended capsular ligament at liberty would not the knife be more humane, rather than run the risk of the excessive irritation and dangerous sloughing, which I have every reason to believe would follow Mr. Turner's proposed horrid and monstrous operation. Mr. Turner, I perceive, has extended his deep firing also to the canine species. Poor ANIMALS! I hope this plan will not long continue in use, such a practice being unnecessarily cruel, and barbarous in the extreme, whether practised on man or brute. I have not entered into the true rationale and effects of firing, trusting some one more able will handle that part of the subject, which Mr. Turner does not appear to me fully to comprehend. I am, Sir,

Your most obedient servant,
GEORGE FENWICK, Vet. Surg.

Grosvenor Mews, Bond Street,
August 24, 1830.

THE LANCET.

London, Saturday, Sept. 4, 1830.

THE protracted Inquest which was held upon the body of the unfortunate Miss CASHIN, has terminated in a verdict of manslaughter against JOHN ST. JOHN LONG. Our peculiar position in this unhappy proceeding enjoins upon us the strict observance of silence; we shall offer, therefore, no opinion upon the merits or the demerits of the case, but content ourselves with inserting an article taken from *The Times*, and another from *The Medico-Chirurgical Review*. After the trial of ST. JOHN LONG, we shall not hesitate to speak out boldly; but at present, as we stand almost as the prosecutor of Mr. LONG, it would not be just if one word were to proceed from our pen, which could influence the minds of the jury in the forthcoming trial.

As the presence of the Editor of this Journal at the Inquest has been by some deemed obtrusive, we think it right that the members of the profession should be put in possession of the circumstances which led him to assume the character of a medical advocate on that occasion. Late on Friday night two gentlemen called at the residence of Mr. WAKLEY, and stated that an inquest was to be held on the body of a young lady who had been under the treatment of JOHN ST. JOHN LONG; that her life had terminated almost suddenly, and under circumstances which appeared to demand a rigid investigation; that the sister of the deceased young lady, who also had been under Mr. LONG's care, was in a dying state, and only expected to survive a few hours; that the family was from the sister kingdom, and that the mother and brother-in-law, quite strangers to London, were suffering the most intense anguish, were half distracted, and knew not what course to adopt; that the brother-in-law, Mr. SWEETMAN, had been strongly urged to request the Editor to attend the inquest, and act for the family, in order that the ends of public justice might not be defeated. In compliance with the wishes of the relatives, the two gentlemen observed, they had then called. Mr. WAKLEY pointed out to them that his appearance at the inquest at that time, as he was a candidate for the office of Coroner, would to many persons have a very disagreeable appearance, and, in the absence of explanation, would at first sight indicate bad taste, if not defective judgment. Moreover, he represented to them, that having long ago denounced Mr. LONG as a quack and an imposter, his appearing, as it were, against Mr. LONG, might be thought to partake of vindictiveness. He therefore refused, in the most positive manner, to take any part in the proceedings, unless he received, on the following morn-

ing, an especial request for his interference from the deceased young lady's relatives. On the following morning, a gentleman called from Mr. SWEETMAN and requested, as a particular favour, that Mr. WAKLEY would visit the relatives in Mornington Place, before the hour appointed for holding the Inquest. Accordingly, about half an hour previous to the arrival of the Coroner, Mr. WAKLEY called at Mr. SWEETMAN'S residence, and after a very few words he found that he could not, consistently with what he deemed to be his public duty, any longer withhold his consent to attend at the inquest, on the part of Mr. SWEETMAN and the deceased young lady's distracted parent. Of course Mr. Wakley acted without fee or reward, and solely upon public grounds. If there be any person who condemns his conduct, he can neither be a kind parent, nor an affectionate brother, neither is he possessed of those feelings which should direct the course of an honest man.

"THE verdict against Mr. ST. JOHN LONG is, in our humble opinion, a very useful one. We do not mean to trample on a man already fallen, but we think it a duty not to lose a fit opportunity of inculcating truth. This truth is so obvious, that a child may understand it, and yet the late extraordinary inquiry has shown that men and women of respectable station and talent may overlook it: it is, that though ignorance may occasionally stumble and deviate into a right course, yet knowledge and experience are the only safe guides. We are not so rash as to hope that this verdict will effect any serious cure of that credulous weakness to which so large a portion of mankind is subject; but though dupes may and will abound as long as folly and conceit exist, yet the empiric will be somewhat alarmed when he finds that even the patronage of lords and ladies cannot save him from the consequences of his gross and ignorant rashness. This inquiry certainly exhibits very slight evidence of sense or judgment in that class which is usually thought, and is, in fact, on many accounts, most respectable: the disciples of the Prophet Brothers, or of the Shiloh-woman Southcote, could not fall with more head-long eagerness into error, or cling to their error with more courageous obstinacy. What hopes must not the conduct of such persons have inspired into every quack in the kingdom, if it had not been for that useful trisyllabic epithet—*manslaughter*, which an honest jury has affixed to the conduct of this great idol of opulent folly? Most of our readers, we dare say, recollect the confession of a famous empiric at Bath, who was asked by a physician, who met him in the street, how it was that he contrived to have a constant influx of patients, while the regular practitioners had scarcely any applicants. 'While you have been making this remark,' said the Quack, 'how many people do you think have passed us?'—The physician answered, 'Perhaps ten or a dozen.' 'How many of that number,' resumed the Quack, 'possess a sound, rational judgment?'—'How many?' said the other, 'not above one in ten.' 'Even that calculation,' said the shrewd and candic Empiric, 'is too liberal; but it will explain the point in issue: the nine ignorant fools go to the Quack: the one rational being applies to the regularly-educated physician.' This story is as applicable now as it was fifty years ago; ignorance and obstinacy, and, let it also be admitted, sickness and pain, catching, like drowning persons, at even straws for succour, will always supply numerous dupes for the impudent and plausible to act upon. We see now more than ever that little hope of reformation of this mischief can be deduced from the improved intellects or judgments of people in the higher ranks; or, to speak less invidiously, from the general advance of knowledge; but fear may do what reason cannot: salutary punishment, if it cannot force the unthinking to be less credulous, may deter the audacious from pernicious attempts to mislead.

"We still think, and we see the jury thought so too, that much of the late inquiry was irrelevant. We are not unaware of the talent, and skill, and experience, of the counsel for Mr. LONG: he knew, much better than we could tell him, that the points in issue were:—Did the wound made by Mr. LONG occasion Miss CASHIN'S death?—Was that wound such an one as ought to have been inflicted on a healthy subject to

prevent a non-existing disease? He knew better than we, that to establish the negative of the first point, and the affirmative of the second, he ought to have called eminent members of the medical and surgical branches of the art of healing. This he would no doubt have done had he expected favourable answers, but in the absence of such expectation, he did the next best thing for his client which, however, we are glad to see did not divert the attention of the jury from the real merits of the case: he produced an imposing array of respectable and amiable people of the middle and higher ranks, but whose respectability qualified them to decide a medical or surgical question, just as much as it would to discover the longitude or the north-west passage. The jury have acted, as with few exceptions English juries always act,—they have discharged their duty according to the principles of common sense and plain integrity. Their verdict will be quoted as a striking proof of the steady and rational resistance of conscientious men to the charms of eloquent declamation, to the force of multiplied and skilfully arranged counter-statements, and the overbearing pretensions of high rank and acknowledged fashion.—*The Times, Sept.* 1.

"We are not much in the habit of praising our contemporary, Mr. Wakley; and, therefore when we speak of him in laudatory terms, he, as well as our readers, may be assured that he merits our approbation. In the recent and still-pending Inquest (Saturday, 28th August), we think Mr. Wakley has acquitted himself both ably and judiciously. True, he had justice, popularity, and some of the best feelings of our nature, on his side; but then he was opposed to a lawyer, whose practice at the Old Bailey, and engagement in cases declined by the respectable members of the Bar, rendered him capable of using all kinds of mean artifices and personal insults for the purpose of brow-beating his antagonist. Yet Mr. Wakley set him down repeatedly—and that by coolness of temper and strength of argument. Galled, and foiled, and irritated to fury by a medical man, uneducated to the bar, and whom he hoped to crush by his Newgate ribaldry, he at length appealed to the Coroner to prevent Mr. Wakley from opposing him at all! These attempts showed the extremities to which he was driven; and the sentiments of the jury, as well as of the spectators, were often and unequivocally evinced in favour of his antagonist. The pertinacity of the lawyer, in forcing down the throats of the jury a host of evidence from a gang of fools—the whole intended, we have no doubt, to puff off the charlatan in the newspapers, rather than with any hope of altering the verdict of the inquest—was most injudicious. Mr. Adolphus will ruin the cause of his client by his want of judgment, as well as of temper. A leading object in the examination of his witnesses is to prove that St. John Long's liniment will only act on *unsound parts!* A silly hypochondriac *swore* to this effect! The liniment would only inflame the skin over the first vertebra of his neck, because the disease was evidently in the mucous membrane of his trachea! ! Mr. Adolphus is one of the most injudicious advocates we ever heard open a mouth in a court of justice. He completely disgusted the jury and every spectator, who was not gulled or bribed by the quack. We wish Mr. Wakley every success. We shall show him that we possess a species of courage superior to that of daring and opposing an enemy. We can praise that enemy, when he is deserving of praise."—*The Medico Chirurgical Review.*

CORONER FOR MIDDLESEX.

The Committee appointed to conduct the election of Mr. Wakley, have requested that the following extracts may be laid before the profession. The opinion that a medical man should fill the office of coroner, appears to prevail universally, and if the public and the members of the profession continue their exertions without relaxation, they will, in a very few days, have an opportunity of rejoicing at the triumph of a great national principle over a disgusting and pernicious custom which has continued for ages.

"The ignorance and imbecility displayed by coroners, on the most important occasions, are certainly extremely disgraceful.

Those who usually perform the duties of their office in the worst manner are the mere technical lawyers. Their chief desire appears to be, to get through their business in the shortest time, that is, with the greatest ease to themselves, and this desire (those who have witnessed inquiries are aware) is gratified in the most flagrant manner at the expense of public justice. Unless the inquiry happen to be one of an extraordinary nature, the first evidence which accident presents is received implicitly; no new trains of evidence are sought out, however directly they may be indicated by circumstances of suspicion; nothing is done that may incur trouble. Mr. Wakley, we believe, is the only candidate with any pretensions to public ability who has come forward.—We have heard medical men of the greatest ability acknowledge that he has, by his publications, rendered very eminent service not only to the public, but to the medical profession itself. We therefore suggest that exertion in his behalf by the freeholders will be of public service, and is especially necessary, as we may be assured that quacks of all sorts will make common cause against him. He will have strong motives to gain a character for the discharge of his public duties; and we think there can be little doubt that he will perform them better than any other candidate who is likely to come forward."—*The Examiner.*

"Amongst the candidates for the office of Coroner already in the field, is T. Wakley, Esq., Editor of THE LANCET, who has long contended that the situation should be filled by a medical man.—Mr. Wakley is a gentleman of extensive experience in his profession, and his abilities are well known as a writer on medical subjects. He will, no doubt, receive the support of all those who consider that the Coroner ought to be a medical man."—*The Morning Herald.*

"We believe it is generally allowed that Mr. Wakley is an intelligent man, and the public have had an ample proof of his activity—two eminent qualifications for any office. If he succeed in his object, we hope he will set about reforming the Inquest Juries. Our Coroners sometimes act foolishly, and sometimes worse than foolishly; but their defects are grains in the balance to those of their coadjutors."—*The Spectator.*

"Mr. Wakley is a candidate for the vacant office of Coroner for the county of Middlesex.—We approve of the principle of electing a person of medical or surgical science, whose talents may enable him to judge in the cases which come before him, of the real cause of the death of the deceased."—*The Morning Advertiser.*

"A strong contest is expected for the Coronership of the eastern district of Middlesex, vacant by the death of Mr. Unwin. Mr. Wakley, the editor of THE LANCET, has started, and bids fair to run a good race. No man can be better qualified for the office."—*Bell's Life in London.*

***A Series of Chemical and Medical Tables, forming a Synopsis of Chemistry, Materia Medica, Pharmacy, and Nosology.* By JOHN HOGG, House-Surgeon and Apothecary to the Dispensary of the University of London. London. J. Taylor. 1830. Large 4to.**

Of these tables the last appears to us to be altogether superfluous; we cannot see of what possible use a mere list of the *names* of diseases can be, especially when those names are far from being in general use, and are, in many cases, unintelligible, without the explanations given in the work (Good's Study of Medicine) from which they are taken. Our observations may, therefore, be confined to the first three. Of these the chemical table affords a considerable quantity of information in a small space, and in a convenient form for reference, showing, first, the atomic weights of simple substances, then the composition of "double, of triple, and of quadruple compounds," of certain "miscellaneous compounds," chiefly vegetable and animal substances, which could not be arranged under either of the former heads, of sixteen of the principal mineral waters; and, lastly, the quantity of alcohol contained in certain spirits, wines, and other beverages. In this long list of nearly 500 substances, we have observed very few errors; but those few we think it right to point out, for the most rigorous accuracy should be observed in a table

of this kind, to render it of any service. Thus, Prussian blue is stated to consist of peroxyd of iron and *hydro*cyanic, instead of *ferro*cyanic acid; gallic acid is omitted in the enumeration of the component parts of gall-nuts, hypo-nitrous, nitrous, and nitric acids, are unnecessarily mentioned a second time under the denominations of tritoxide, tetroxide, and pentoxide, of nitrogen, &c. The second table, which refers to only vegetable and animal substances, is divided into seven columns; the first exhibiting the systematic name of the plant or animal, the second the English name, the third the part employed, the fourth the medicinal properties, the fifth the country which produces it, the sixth the Linnæan class and order, and the seventh the natural order or family. In this table the defects are, that the name of the medicine, except where it is the same as that of the plant producing it, is not mentioned at all; that the first column, which is arranged alphabetically, and consequently serves as a key or index to the rest, is composed of the systematic Latin names, which are comparatively little known; that the natural arrangement of Jussieu has been preferred to the more modern and perfected one adopted by Decandolle and other botanists, and which must be at least as well known to medical students; and, lastly, that there are several not very trifling typographical errors. In other respects, this table appears to be perfectly correct. The pharmaceutical table is little else than an abridgment of Thomson's Conspectus, a work which is already almost as brief and concise as possible. Accordingly we find here, that while on the one hand much is repeated from the first and second tables, on the other the mere composition of the medicine is given without any directions for its preparation, or any other information, except as to the dose and properties, the latter of which are given throughout in a single word. Our opinion, therefore, of the work is, that though, taken altogether, it is creditable to Mr. Hogg, it might have been made more perfect; its chief defects may certainly be excused, arising, as they do, rather from confined space than from want of ability or information on the part of Mr. Hogg,—a gentleman exceedingly well informed in the literature and practice of his profession.

A Treatise on Poisons, in relation to Medical Jurisprudence, Physiology, and the Practice of Physic. By Robert Christison, M.D., &c., &c., Professor of Medical Jurisprudence in the University of Edinburgh.

We have little hesitation in pronouncing this work to be far superior to any other on the same subject, whether original or translated, in the English language:—we say this deliberately, after a most sedulous and attentive perusal, and after having diligently collated its most important passages with analogous extracts from the several contemporary publications on Medical Jurisprudence. Dr. Christison, throughout, evinces a talent for arrangement scarcely to be surpassed, which, coupled with a clear and masterly style of expression, imparts to his treatise an animated and impressive character, highly creditable to his ability, and worthy of general imitation. Nor is this his only claim to our favourable notice; we have, besides, to applaud the exemplary diligence with which he has toiled through the multitudinous heaps of German, French, and Domestic literature, from all which sources, and especially the first, he has selected whatever was relevant to his subject, with a skilful and discriminating hand.

Having spoken thus favourably of the general character of this treatise, we are still compelled to observe, that it contains numerous errors, which require deep attention in the preparation of a second edition. These are not mistakes in typography alone; Dr. C. dismisses the stomach-pump, for example, with a far too superficial and hasty consideration,—so hasty and inadequate, indeed, that we feel obliged to warn purchasers of the work, not to permit Dr. Christison's high authority to prejudice their opinions, nor above all to interfere with their practice, with respect to the use of this invaluable instrument. Again, as one of our correspondents has recently pointed out, he has passed over iodine without giving a process for its detection; and he has, besides, given circulation to an error of the most dangerous kind with regard to the analysis of mixtures supposed to contain nitric acid or its saline combinations. His process for detecting oxalic acid should also be received with caution, for (as we shall perhaps take another opportunity to demon-

strate) it is exposed to many and highly important objections, one of which we shall here particularise. He boils the impure and *suspected* oxalate of lime with the carbonate of potash in excess, and after the action has ceased, neutralises the excess of alkali with *nitric acid*. The danger to the credit of the analysis likely to ensue from this proceeding, scarcely requires explanation, but it arises from the fact that it is impossible to leave nitric acid in contact with a vegetable or animal mixture, (any one especially which contains saccharine matter,) without the rapid and almost immediate *formation of oxalic acid* itself.

We have also to upbraid Dr. Christison with apparent remissness, as far as regards the analysis of vegetable poisons, for in this department he contributes little or nothing to our knowledge on the subject. He may say, it is true, he has arranged *for* us all that is already known; but we are convinced, that by a little application, his great analytical talents would soon have collected ample materials for the improvement of this obscure department of toxicology. In this pursuit, we feel convinced that rich rewards of important discovery and consequent reputation, await the diligence of original and competent investigators; and we know of no one better qualified to undertake the research, than the author of the present work. We shall be much disappointed if his second edition do not realize our expectations.

We have only further to add, that, unlike the flippant commentators, who "reviewed" this important publication within a fortnight after it issued from the press, alike ignorant of its real merits, and incompetent to perceive its defects, we have delayed our observations on the work, till a laborious scrutiny into its chemical department entitled us to speak with confidence as to the value of its most practical division, namely, the processes recommended by Dr. Christison for detecting poisons. To all of them (with the exceptions already stated, and a few qualifying circumstances relative to arsenic) we are prepared to award our entire approbation, particularly to the plan he proposes for the detection of mercury in organic mixtures. To these several processes, we shall, perhaps, revert on another occasion.

OBSERVATIONS ON THE CORONERSHIP.

By JOHN GORDON SMITH, M.D.

Professor of Med. Jur. in the University of London.

To the Editor of THE LANCET.

SIR,—I have read, with much pleasure, your address to the freeholders of the county of Middlesex, and have an earnest eye upon your manly and scientific proceedings in the matter of the *Gate-house inquest*. I lament (and am every way entitled to lament) the apathy which has so long disgraced the medical profession of this country, concerning matters of legal investigation, connected with injuries to *the person*. We are feelingly enough alive to what touches *property*; but, either from a squeamish delicacy, or (what I much suspect to be the case) a fear lest personal interests should suffer, when professional conduct and capacity come under *public* notice, our brethren hang back, and decline to fish in troubled waters.

I tender you my personal thanks; first, for the excellent papers you have printed in your Journal concerning the claims of medical men to become coroners; secondly, for your avowed determination to stand as a candidate for the important office now vacant; and, thirdly, for the support you have uniformly and powerfully given to medical jurisprudence, a title I was delighted to see introduced into your address. Allow me (for reasons which will immediately manifest themselves) to say, that with the first cause of my thanks—the papers—I had no concern; I neither have the merit of having written them, nor to the present moment can I guess (unless from the pen of the Editor) whence they emanated; in short, I know nothing more of them than that their good sense and sound principles entitled other readers of THE LANCET to approve and admire.

But, Mr. Editor, at the time when these articles made their appearance, I was myself engaged in a strenuous contest for a coronership. Your assistance was coincident, but unsought. I had a great object to accomplish, which, in spite of severe ill health and many disadvantages, I DID achieve; and the way has been so *far paved for your success* by my previous labours. Go on with your endeavour to be one of the coroners for the metropolitan county, in which, if you succeed (as God knows I wish you may), the profession and the public cannot, *à priori*, calculate the extent of the benefit which will accrue. Allow me to add, that although I did not seek the powerful support of your Journal, I duly estimated it.

But let me now come to the detail of a few particulars, with which the profession cannot possibly be acquainted, but of which I now request that you will enable me to put them in possession. The revelation may not be altogether useless to yourself.

I undertook the *hopeless* task of standing for the city coronership, chiefly for the sake of getting the office, if possible, out of the hands of the legal profession; and so far my exertions were successful, that, although, ere I had moved in the matter, the Committee for Officers and Servants of the Corporation, had sent a printed report to the Court of Common Council—their constituents—representing the *necessity* of appointing a lawyer, or person of legal pretensions, the result of our arguments and representations before the Committee was a *second* report, declarative of the not unimportant fact, that any gentleman of liberal education and respectable character was eligible to the office. I need not say how I failed, for every one in the least acquainted with the *system* of city arrangements, will rather be disposed to wonder at my assurance in going forward than at my want of success. I will not permit it to be called *a disappointment*, because I expected nothing: at the same time there was a considerable deal of interesting private procedure on the occasion, which satisfied me, that by persevering till the last I should do the public and the profession some benefit, although at an expense of time, health, and trouble, I was not very able to afford.

In the course of these proceedings I made no attempt whatever to canvass; indeed that was totally out of the question, the ground having been hunted clean and clear before I mooted the matter at all; but, had it been otherwise, I should have declined such a task. It was my determination to try the question upon the ground of public utility; that failed, and private interest carried it.

So much for myself. Permit me next to subjoin a few words on the general merits of the cause in which I am happy to perceive so able a coadjutor embarked.

I dare say you have been told, as I was, by gentlemen of the law, that medical men are not qualified for the office. This is a pure and illiberal *assumpsit*. Lawyers, generally speaking, know nothing at all about what an *intellectual* qualification consists of; and they will not believe that a person of a general philosophical education must inevitably know much more of *their* business than it is possible for men exclusively technical to acquire of any other than their own; but the reproach that they cast in our faces is, that we are unacquainted with the rules of evidence.

Now, Sir, I am (for my own part) ready to meet them half way upon this ground, and to admit that medical men are, in general, unacquainted with the subject just mentioned; I will even do more, I will acknowledge that the ability of a judge, when presiding in a court, and consequently of the coroner, when superintending and conducting an inquest, is prominently, if not chiefly, exercised in deciding what is and what is not evidence; but whence does he derive the knowledge necessary to enable him to discharge this duty? Certainly from two sources, reading and practical observation. With regard to the first, assuredly the same means of instruction are at the command of medical men which are presented to lawyers. There are a few books (very few I believe) on the subject of evidence, which are not sealed to us any more than to them; and, as far as I have been able to consider their object and manner, they do not seem to be particularly mysterious. Gilbert, Phillips, and Starkie, are intelligible writers enough; and I acknowledge my own obligation to them on the occasion of hazarding a work exclusively designed for the guidance of medical men in this article of practice. And what is to hinder us from acquiring a competent share of familiarity with the rules and admissibility of evidence as displayed in our courts? We have only to frequent them, and also to read with some degree of attention the reports of trials, more especially those which have turned chiefly, if not exclusively, upon the testimony of medical men. This remark calls up one which will show, at least, the appearance of a solid objection; for if medical men pass much of their time in these researches and pursuits, their patients must of necessity be neglected. The corollary of this I readily concede to be as follows: that medical men, in general, cannot be coroners and practitioners. It is obvious and undeniable that a selection must be made; for my own part, I have never held the opposite notion; and I had occasion, in the course of matters (already sufficiently detailed), to observe, that it did not follow because a man was an accomplished and successful physician or surgeon, that he must of necessity carry the qualifications necessary for conducting an inquisition. To this sort of duty, and indeed for the purpose even of delivering testimony in a satisfactory and intelligent manner, no provision is made in this country under the head of *education*; and the consequence has been, that (within the scope of considerable research) I have not been able to find more than *three* cases of which the medical profession have not some reason to be ashamed. These three I could point to explicitly; but it will be enough to say, with regard to one of them, that, and how it may, it has hitherto been well understood. Medical jurisprudence, depend upon it, is

making rude attacks upon many optics, and these are the more observable, as well as the more indispensable, inasmuch as the gentler measures of argument and persuasion have failed to raise the profession in England to the level it has so long occupied in other countries. But to return to the objection as to *want of time*.

I am truly rejoiced, and absolutely revived (after a considerable period of despondency), at the turn this matter has recently taken. There are, then, highly influential persons in the profession who think and view, in respect to the nature of medical evidence, as I do. I claim you, and others of considerable note and vast promise, as co-operators. A rival candidate I shall not become; but if you, whose leisure, or release upon the score of daily and hourly calls to the sick chamber, leave all the time required for the discharge of such important duties, and whose professional acquirements no man will venture to cavil at, succeed in this undertaking, you will do me all the good I aim at in this world. We shall soon see the dictum of authority in this branch of study laid upon the student; we shall quickly behold men of adroitness and competency speaking sense, to the satisfaction of a perplexed but not indifferent public, represented by their neighbours, in the capacity of jurymen, the *many-coloured*, but single ensign of English justice; and I trust we shall see the turbulence of lawyers calmed, as well as the respect for quackery and impudent pretensions put down. For my own part, Mr. Editor, it will, in the mean time, be satisfactory to have the call to instruct the tyros of some of our schools in this singularly-splendid branch of their duty, and I hope that no pupil of mine will ever incur the censure of a medical coroner. Once more, I admit that not every practitioner *could* be a coroner, for many obvious reasons; but let a man already conversant with his ordinary duty, devote himself to the acquisition of the necessary knowledge; and if he be a person of fair abilities, of liberal education, of some acuteness and some courage, he will do better than any among a thousand attorneys who might be helped to the situation. The arguments drawn from the nature of the investigations which come before this functionary, I need not here repeat. For once that it is an affair of *tresor trove*, it is 999 times a question of personal injury; and who, let me ask, after reading a recent and admirable necrotomical report, as given by one who is adding already to the lustre of the profession, will be hardy enough to assert that such are *lawyers'* matters? Some of these gentlemen have thrown the decision as to *deodands* in my teeth, as if a medical man did not know the difference between the nominal value of a costermonger's cart-wheel, and that of a nobleman's carriage, as well as any lawyer in England! This was the strongest of all the arguments brought against me by the legal men; there was another, however, of a quaint but not insignificant nature raised in the Common Council, which I shall allude to, for the sake of introducing the answer with which it was met:—"Pray," Doctor, said a worthy member of the Corporation, "is it not a fact that medical men are reluctant to say all they know before juries?" I had my answer quite ready; but a professional friend, who is likewise a most respectable member of the court, and under whose advice I was perfectly right in acting, saved me the trouble, by observing that "such might often be the fact, and that it was to be accounted for by the irrelevant and nonsensical nature of the questions too frequently put; Give us," said my friend, "those who *can* examine us, and we shall not treat them with contempt."

Do you not agree with me, that if there be a necessity for appointing *special juries* (and every one knows, many a one to his cost, the meaning of this term) to decide questions of property, there is not, *a fortiori*, one for intelligent men to sit upon matters of life, liberty, and reputation? True, the ultimate issue rests not with the coroner's inquest, and that circumstance has a strong tendency to create carelessness. Is it no injury to let a man lie among felons till a jail-delivery, at which he is discovered to be perfectly innocent? And is it not an injury to the public, as well as a reflection upon the parties, where a slovenly inquiry leads to exculpation, though every sensible and well-informed person believes the result should have been otherwise—to say nothing of laying accusations upon wrong shoulders, and troubling the peace and injuring the respectability of families by crude decisions and hasty inferences?

I intended to have concluded with a few words on the great difference between the secluded transactions of a medical man in the sick chamber, and the public duty he is called upon to perform in a court of justice in the face of the world; and I could refer to too many examples of common professional celebrity being of very little use then. *Medical evidence* has a nature of its own, and must be studied as well as *nosology*; for its application, in a creditable and efficient manner, is not to be picked up as we go along. All the medical authorities in Christendom are of this opinion, excepting our own.

But I shall not trespass further on the present occasion.

REMARKABLE CASE OF LONGEVITY.

At the meeting of the Medico-physical Society of Florence, on the 13th of December, Dr. Bussi related the case of a female of his acquaintance, who at that time was 94 years of age, and in the history of whose life there were some rather curious circumstances. Her family had been remarkable for longevity; her father died in his 106th year, her grandfather, by her father's side, in his 109th year, and her mother's father in his 69th year; the latter had, even at his old age, been remarkable for his bodily strength. The woman herself had been rather a delicate child, she was married in her fifteenth year; in the third month of her marriage she menstruated for the first time, and in the fourth she became pregnant; in five years she had borne three children. At this period her husband died, and she became soon afterwards subject to hysterics, which it is stated were most effectually obviated by violent exertion; she was passionately fond of dancing, hunting, and riding on horseback, and frequently, when heated, threw herself into a river or a cold bath. This mode of life brought on violent headach, which with slight intermissions continued to her 40th year, when it yielded to the abrasion of the hair; it always returned, however, as soon as the hair had grown to about two inches in length. In other respects, she was in perfect health, in very good spirits, and of most extraordinary appetite, in which she also fully indulged; three chickens, or from five to six pounds of roast meat, and twenty oranges or peaches, were just sufficient for her breakfast. In her 45th year, her eldest son (who at the time of the report was 77 years old, and in the full enjoyment of health) received, in battle, a wound in the left breast, and the fright which this accident caused, produced, strangely enough, a hæmorrhage from her left breast; the discharge was not copious, but continued for two years. Her menses had always been rather scanty, and she had frequently been subject to various hæmorrhages. In her 53rd year menstruation ceased, but re-appeared eight months afterwards, and *continued regularly to her 94th year*, which is the age she had attained at the time of the report. She is rather of small stature, but of very robust frame, and possesses the full use of all her senses; she sleeps only five hours, gets up at day-break, and takes a walk of several hours; her manner of life is extremely simple, and though her appetite is rather strong, her meals are frugal, especially if compared with what she formerly had been used to. She sleeps an hour after dinner, the rest of the day she is continually engaged, being employed either in domestic affairs or reading; she walks very much, and so quick, that sometimes young people are scarcely able to follow her. Six years ago she met with an accident and broke both arms, but was perfectly cured within four weeks. At present she is in perfect health; at night only she has sometimes slight attacks of dyspnœa and agitation; when they occur, she gets up and opens the window; the fit then generally subsides, if not, she goes out into the open air, and after about half an hour's walk, feels perfectly well again.—*Ann. Univ. di Med. Fasc. di Maggio e Giugno*, 1830, page 595.

SINGULAR EFFECT OF LIGHTNING.

At a late sitting of the Institute, the following communication was made by M. Verges. On the 20th of last March, the lightning struck a man whilst in the field, and sitting quietly against a wall; the electric fluid entered apparently between the neck-handkerchief and the skin, at the right side of the back part of the neck, and proceeded over the arm to the hand; its principal effect was, however, on the dorsal and lateral surface of the chest; in the lumbar region it had turned towards the navel, and thence to the abdomen, to the genital organs, and the legs down to the toes. In the whole of its course, the lightning appeared to have affected only the integuments, which were black, covered with phlystæne, and in numerous places perforated; the epidermis was in many parts, to a greater or less extent, completely destroyed; the hair of all the parts struck by the lightning was burnt. The lesion of the skin very much resembled a burn, and also caused a similar pain; a large portion of the dress was destroyed or damaged, the shirt was almost completely burnt. At the outer side of the shoe, whence the lightning seemed to have entered the ground, there was a cleft of about three inches in length. Neither during nor after the accident did the man lose his senses, and he declared that at the moment of the concussion, he had the full consciousness of what happened to him. His nervous system did not appear in any respect to be affected; the pulse was regular and there was no fever; he complained only of violent pain in the wound, and excessive thirst, and felt as if he was constantly enveloped in fire, etc. His wife, who had been present at the accident, had only been thrown down without receiving any further injury; she stated that at the moment of the flash, she had seen her husband surrounded by a bright flame.—*Revue Médicale, July*, 1830.

ON THE EFFECT OF CHLORINE AS AN ANTIDOTE AGAINST PRUSSIC ACID.

In a former Number of THE LANCET, we communicated M. Orfila's treatment of cases of poisoning by prussic acid, and it was then stated that he considered chlorine to be one of the most effectual antidotes. M. Gay-Lussac and Arago's Annales de Chimie contain some interesting experiments on the subject, of which the following is a concise extract:—

"In order to judge more accurately of the effect, the experimenters, MM. Nonat and Persoz instilled the acid into the eyes of the animals, and endeavoured to administer the antidote in each case in a different stage, as will be seen below.

"In the first dog, the chlorine was given at the time when he began to be restless; the relief was almost immediate, respiration became more regular, and after repeated vomiting and alvine evacuations, the animal seemed to be perfectly restored.

"In the second dog the chlorine was given after the development of the tetanic affection, the further progress of the symptoms was arrested, though the amelioration was not so evident as in the first experiment; the restlessness, dyspnœa, and convulsions, continued for about ten minutes, when vomiting acceded, which was followed by a more decided remission of all the symptoms.

"On the following day the acid was instilled in the same manner as before, but without any subsequent administration of chlorine, and in both dogs the result was fatal.

"In a third dog the use of the antidote was deferred until respiration had been suspended for twenty-five seconds; the animal evidently struggled with death for several hours, but was ultimately restored to life; the paralytic affection of the hind-legs also disappeared, and after ten days, as well as the other symptoms, had entirely disappeared.

"In two other dogs of nearly equal size, the crural vein being laid bare, and carefully detached from the surrounding parts, a drop of prussic acid was let fall on it; the effect was immediate; one of the dogs [who was left to itself died within a few minutes; in the other a few drops of chlorine having been instilled on the crural vein, the progress of the symptoms was completely arrested, and after a few hours, but for the wound, the dog seemed to be quite well."

Some further experiments were also made, which seemed to prove that the previous administration of chlorine prevented the poisonous effect of prussic acid given or instilled afterwards; but this, as well as the above observations, wants further experiments to confirm them.

The chloride of lime or soda, when used instead of chlorine, had no neutralizing effect whatever on prussic acid.

STATE OF THE WOUNDED AT THE LATE CONTEST AT PARIS.

On the evening of the 27th, three wounded men only had been admitted at the *Hôpital de la Charité*, on one of whom the exarticulation of the upper arm was performed; on the 28th, about eighty wounded were brought into the hospital, and on the 31st, the number of all the wounded admitted, amounted to one hundred and nine, of whom one was a female, very few were soldiers, and all the rest citizens. Of the latter, fourteen died during the 28th, 29th, and 30th.

In general, most of the wounds were dangerous, the greater part of them being made by cannon or musket balls; it is besides stated, that the wounds of the citizens were by far more severe than those of the soldiers, the latter being of course provided with better arms, &c.

Up to the 5th of August, two exarticulations of the upper arm, eight amputations of limbs, and three amputations of fingers, had been performed. There were twenty-five wounds of the thigh, three with fractures of the thigh-bone, seven wounds of the knee, nine of the leg, two of which were complicated with fracture; six of the upper-arm, three with fractured humerus, and three wounds of the fore-arm; a comminuted fracture of the lower jaw, two wounds of the nose with fractured nasal bones, three of the head, eight of the shoulders, six of the hips, a wound in the loin, the ball having traversed the sacral bone from the left to the right side, a penetrating wound in the pelvis, the ball having entered the left groin and come out near the anus; a deep wound in the buttock produced by an iron spike of the railing round the Louvre, while the man was attempting to leap over it, &c.

In one case the trachea had been opened, the wound was cautiously enlarged, and respiration thus restored; in another case, the ball seemed to have entered laterally above and behind the clavicle, and after having traversed the soft parts before, and apparently wounded the anterior paries of the trachea had come out on the other side, a little above the sternum; no lesion of the lung was accordingly suspected to have taken place; the face, upper extremities, and chest, became, however, emphysematous, and although the wound was enlarged, the dyspnœa increased, and the patient died within a few days; on examination of the body, it was found that the ball, after its entrance behind the clavicle had lacerated

the upper portion of the lung, and fractured the first rib; it had then turned upwards, and after crushing the sternal extremity of the other clavicle, had come out above the sternum without wounding the trachea at all.

A man was on the 29th brought into the hospital with a large gun-shot wound of the face; the ball had entered on the left side of the nose, and fractured the nasal bone; the patient did not know what had become of the ball, and it appeared almost superfluous to seek for it in its further course along the base of the skull. The right side of the face became, however, paralytic, and on the 16th of August, a fluctuation was felt behind the right ear: on making an incision, a large abscess was found to have formed behind the mastoid process, a few fragments of which were extracted, and lastly, the ball was also found in it; it had accordingly traversed the nasal cavity in an oblique direction from left to right, and glided along the basis cranii to the mastoid process, after fracturing which, it had stopped. Considering the numerous nerves and large vessels, which in this course of the ball have necessarily been exposed to lesion, the patient may be deemed very fortunate to have hitherto escaped.

A very interesting case of a wound of the left thigh was observed; the ball had entered at the outer side, and it was not known whether it had come out, or what had become of it; after a fortnight, however, an abscess formed at the inner side of the thigh, and this having been opened, the ball was extracted; *it was quite flat as if it had been shot against a wall; the thigh-bone did not however seem to be in any way affected.*

On the evening of the 26th of July, the total number of patients at the *Hôtel Dieu* amounted to 901; on the 27th, 362 patients were either discharged cured, or transferred to other hospitals in order to make room for the wounded, 386 of whom were admitted during the three memorable days, the hospital was accordingly far from being crowded, as the number of its patients may without any inconvenience, be increased to a thousand. After the three days the admission of wounded from the ambulances, etc., continued, but, of course, in a much less proportion, and the total number of wounded admitted at the *Hôtel-Dieu*, had, on the 7th of August, amounted to about 500, of whom 25 only were soldiers. The number of deaths was 76, a mortality which is stated to be much less than was to be expected from the severity of most of the wounds. (We find the same remark made in most of the reports on other hospitals.)

At the *Hôpital Beaujon* 86 wounded were admitted, 25 of whom died. Most of the wounded were citizens; two wounded females were also brought to the hospital, one of them in the seventh month of pregnancy; she had received a slight gunshot wound at the shoulder, and is reported to have been, on the 7th, in a satisfactory state. The other female was shot through the cheeks; two molar teeth were fractured and the tongue slightly wounded; she also is doing well.

At the military hospital of *Grand Caillou* about 250 wounded were admitted, of whom three only had died up to the 7th of August, two of them with penetrating wounds of the chest, and the third with a penetrating wound of the abdomen.

At the *Hôpital de la Pitié* 120 wounded were admitted; at *Val de Grace* 32; at a Freemason's lodge, 80, etc.; so that the whole number at public institutions amounts to about 1700.

It is calculated that on the whole 7000 men on both sides were "mis hors de combat," of whom it was ascertained on the 20th that about 2200 were killed, or had died of their wounds. On an average 500 more were expected to die.

CÆSAREAN SECTION.

We lately gave an account of this operation as performed by M. Dubois at the Hôpital de la Maternité, and have now only to conclude our report, by stating that the patient died a few days after the operation; on examination, only slight traces of peritonitis were found, and it appears that the fatal result was rather the effect of debility and nervous oppression, than of inflammation. The child is alive and likely to do well.

EFFECTS OF ALUM.

During the last year, M. Orfila was requested by the Parisian Court of Justice, to determine in what quantity alum might be taken without injury. M. Orfila accordingly made a series of experiments, which led him to the following result:

1st. Very large doses of alum, even two ounces of it, may be given to dogs without producing any effect but vomiting and purging, after a few hours the animals appear to be perfectly well.

2nd. If a ligature is applied to the œsophagus subsequent to the administration of it, so that the alum cannot be rejected, death ensues within a few hours.

3rd. The external application of an ounce of alum between the skin and the muscles, produces a deep gangrenous ulcer, with profuse suppuration, and death within fifteen or twenty days.

4th. It is more than probable that an adult may take a very large quantity of alum, amounting perhaps to some ounces, without any decidedly injurious effect.—*Archiv. Génér.*